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         DEC 01
                 FRFULL Content and Search Enhancements
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                 feature for sorting BLAST answer sets
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         DEC 02
                 Derwent World Patent Index: Japanese FI-TERM
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                 USGENE: Enhanced coverage of bibliographic and
                 sequence information
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chain nodes :
1  3  4  7  11  12  13
ring nodes :
8  9  10  16  17  18  19  20  21
chain bonds :
1-4  1-3  1-9  4-7  10-17  11-12  12-13
ring bonds :
8-9  8-10  9-10  16-17  16-21  17-18  18-19  19-20  20-21
exact/norm bonds :
1-4  1-3  4-7  8-9  8-10  9-10  11-12  12-13
exact bonds :
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normalized bonds :
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G2:H,Ak

Match level:

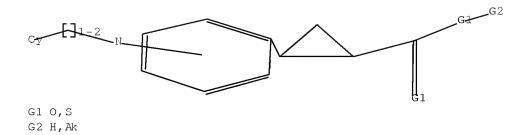
1:CLASS 3:CLASS 4:CLASS 7:CLASS 8:Atom 9:Atom 10:Atom 11:CLASS 12:CLASS 13:Atom 16:Atom 17:Atom 18:Atom 19:Atom 20:Atom 21:Atom 22:Atom

## L1 STRUCTURE UPLOADED

=> d L1

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L1 STR



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=> s L1 SSS SAM

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SAMPLE SCREEN SEARCH COMPLETED - 16134 TO ITERATE

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SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS: ONLINE \*\*COMPLETE\*\*

BATCH \*\*COMPLETE\*\*

PROJECTED ITERATIONS: 315070 TO 330290 PROJECTED ANSWERS: 0 TO 0

L2 0 SEA SSS SAM L1

=> s L1 SSS full

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100.0% PROCESSED 319039 ITERATIONS

153 ANSWERS

0 ANSWERS

SEARCH TIME: 00.00.09

L3 153 SEA SSS FUL L1

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SINCE FILE TOTAL
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FULL ESTIMATED COST
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192.96

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FILE COVERS 1907 - 20 Jan 2010 VOL 152 ISS 4

FILE LAST UPDATED: 19 Jan 2010 (20100119/ED)

REVISED CLASS FIELDS (/NCL) LAST RELOADED: Oct 2009

USPTO MANUAL OF CLASSIFICATIONS THESAURUS ISSUE DATE: Oct 2009

CAplus now includes complete International Patent Classification (IPC) reclassification data for the third quarter of 2009.

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=> s L3 SSS full L4 17 L3

=> d ibib abs histr 1'HISTR' IS NOT A VALID FORMAT FOR FILE 'CAPLUS'

The following are valid formats:

ABS ----- GI and AB

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ALL ----- BIB, AB, IND, RE
APPS ----- AI, PRAI
BIB ----- AN, plus Bibliographic Data and PI table (default)
CAN ----- List of CA abstract numbers without answer numbers
CBIB ----- AN, plus Compressed Bibliographic Data
CLASS ----- IPC, NCL, ECLA, FTERM
DALL ----- ALL, delimited (end of each field identified)
DMAX ----- MAX, delimited for post-processing
FAM ----- AN, PI and PRAI in table, plus Patent Family data
FBIB ----- AN, BIB, plus Patent FAM
IND ----- Indexing data
IPC ----- International Patent Classifications
MAX ----- ALL, plus Patent FAM, RE
PATS ----- PI, SO
SAM ----- CC, SX, TI, ST, IT
SCAN ----- CC, SX, TI, ST, IT (random display, no answer numbers;
             SCAN must be entered on the same line as the DISPLAY,
             e.g., D SCAN or DISPLAY SCAN)
STD ----- BIB, CLASS
IABS ----- ABS, indented with text labels
IALL ----- ALL, indented with text labels
IBIB ----- BIB, indented with text labels
IMAX ----- MAX, indented with text labels
ISTD ----- STD, indented with text labels
OBIB ----- AN, plus Bibliographic Data (original)
OIBIB ----- OBIB, indented with text labels
SBIB ----- BIB, no citations
SIBIB ----- IBIB, no citations
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HIT ----- Fields containing hit terms

HITIND ----- IC, ICA, ICI, NCL, CC and index field (ST and IT)

containing hit terms

HITRN ----- HIT RN and its text modification

 $\mbox{\sc HITSTR}$  -----  $\mbox{\sc HIT}$  RN, its text modification, its CA index name, and

its structure diagram

HITSEQ ----- HIT RN, its text modification, its CA index name, its

structure diagram, plus NTE and SEQ fields

FHITSTR ---- First HIT RN, its text modification, its CA index name, and

its structure diagram

FHITSEQ ---- First HIT RN, its text modification, its CA index name, its

structure diagram, plus NTE and SEQ fields

KWIC ----- Hit term plus 20 words on either side

OCC ----- Number of occurrence of hit term and field in which it occurs

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FILE 'REGISTRY' ENTERED AT 09:26:26 ON 20 JAN 2010

L1 STRUCTURE UPLOADED

L2 0 S L1 SSS SAM L3 153 S L1 SSS FULL

FILE 'CAPLUS' ENTERED AT 09:28:09 ON 20 JAN 2010 L4 17 S L3 SSS FULL

=> d ibib abs hitstr 1-

YOU HAVE REQUESTED DATA FROM 17 ANSWERS - CONTINUE? Y/(N):y

L4 ANSWER 1 OF 17 CAPLUS COPYRIGHT 2010 ACS on STN ACCESSION NUMBER: 2008:1389298 CAPLUS Full-text

DOCUMENT NUMBER: 150:121210

TITLE: One-pot approach for the synthesis of

trans-cyclopropyl compounds from aldehydes. Application to the synthesis of GPR40 receptor

agonists

AUTHOR(S): Davi, Michael; Lebel, Helene

CORPORATE SOURCE: Departement de Chimie, Universite de Montreal,

Montreal, QC, H3T 1J4, Can.

SOURCE: Chemical Communications (Cambridge, United Kingdom)

(2008), (40), 4974-4976

CODEN: CHCOFS; ISSN: 1359-7345

PUBLISHER: Royal Society of Chemistry

DOCUMENT TYPE: Journal LANGUAGE: English

OTHER SOURCE(S): CASREACT 150:121210

AB Trans-2-arylcyclopropane-1-carboxylates were prepared in a novel multicatalytic one-pot process from aldehydes and diazomethane derivs. This process was applied to the synthesis of 3-

 ${\tt phenoxybenzylaminophenylcyclopropanecarboxylates \ as \ GPR40 \ small \ mol. \ agonists.}$ 

IT 1097207-88-9P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(preparation of trans-2-arylcyclopropane-1-carboxylates, including GPR40 agonists, from aldehydes)

RN 1097207-88-9 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[(3-phenoxyphenyl)methyl]amino]phenyl]-, ethyl ester, (1R,2R)-rel- (CA INDEX NAME)

Relative stereochemistry.

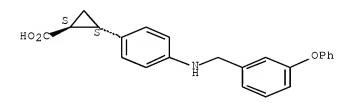
IT 853403-21-1P

RL: SPN (Synthetic preparation); PREP (Preparation) (preparation of trans-2-arylcyclopropane-1-carboxylates, including GPR40 agonists, from aldehydes)

RN 853403-21-1 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[(3-phenoxyphenyl)methyl]amino]phenyl]-, (1R,2R)-rel- (CA INDEX NAME)

Relative stereochemistry.



OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD

(1 CITINGS)

REFERENCE COUNT: 27 THERE ARE 27 CITED REFERENCES AVAILABLE FOR THIS

RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 2 OF 17 CAPLUS COPYRIGHT 2010 ACS on STN ACCESSION NUMBER: 2008:674196 CAPLUS Full-text

DOCUMENT NUMBER: 149:32206

TITLE: Preparation of quinolines and related compounds as

GPR40 agonists

INVENTOR(S): Negoro, Kenji; Ohnuki, Kei; Kurosaki, Toshio; Iwasaki,

Fumiyoshi; Yonetoku, Yasuhiro; Tsuchiya, Kazuyuki; Asai, Norio; Yoshida, Shigeru; Soga, Takatoshi;

Suzuki, Daisuke

PATENT ASSIGNEE(S): Astellas Pharma Inc., Japan SOURCE: PCT Int. Appl., 214 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PA	PATENT NO.				KIND DATE			APPLICATION NO.										
WO	WO 2008066097								WO 2007-JP73014									
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		CH,	CN,	CO,	CR,	CU,	CZ,	DE,	DK,	DM,	DO,	DZ,	EC,	EE,	EG,	ES,	FI,	
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KR	2009	0839.	35		A 20090804				KR 2009-712716					20071129				
EP	2096	109			A1 20090902			EP 2007-832729					20071129					
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	2009																	
NO	NO 2009002471				A		2009	0825								0090		
PRIORIT	Y APP	LN.	INFO	.:						JP 2006-325388			88		A 20061201			
										WO 2	007-	JP73	014	1	W 2	0071	129	
OTHER S	OURCE	(S):			MAR	PAT	149:	3220	6									

# \* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

Title compds. I [R1 = -H, alkyl, haloalkyl, etc.; n = 0-2; J = -C(R6)(R7)-, - O- or -S-; R2, R3, R6, R7 = -H, halo, alkyl, etc.; R4 = -H or alkyl; X = single bond, -CH2-, -(CH2)2-, etc.; Y = -CH2- or -C(O)-; Z = C(-\*), C(R8), N, etc.; \* indicates bond to L; X1, X2 = C(R9), N or N(O); X3, X4 = C(R10), N or N(O); R5 = alkyl, halo, haloalkyl, etc.; R8-R10 = -H, alkyl, halo, etc.; L = -O-alkylene, alkylene-O-, -N(R11)-alkylene, etc.; R11 = -H, alkyl or -C(O)R0; R0 = -H or alkyl] or their pharmaceutically acceptable salts were prepared For example, coupling reaction of compound II with 1-bromo-4-fluorobenzene followed by hydrolysis and treatment with HCl afforded III·HCl [R21 = 4-fluorophenyl]. In GPR40 receptor agonistic activity assays, the EC50 value of III·Na [R21 = pyridin-2-yl] was 0.025  $\mu$ M. Compds. I are claimed useful for the treatment of diabetes.

IT 1030844-75-7P

RL: PAC (Pharmacological activity); RCT (Reactant); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)

(preparation of quinolines and related compds. as GPR40 agonists)

CN 1(2H)-Quinolinecarboxylic acid, 3,4-dihydro-8-[[[4-[(1R,2R)-2-(methoxycarbonyl)cyclopropyl]phenyl]amino]methyl]-, 1,1-dimethylethyl ester, rel- (CA INDEX NAME)

Relative stereochemistry.

IT 1030841-64-5P 1030841-65-6P 1030841-69-0P 1030844-84-8P 1030845-96-5P 1030845-97-6P 1030846-19-5P 1030846-20-8P 1030848-95-3P

RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(preparation of quinolines and related compds. as  ${\tt GPR40}$  agonists)  ${\tt 1030841-64-5}$  CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[(1,2,3,4-tetrahydro-8-quinolinyl)methyl]amino]phenyl]-, sodium salt (1:1), (1R,2R)-rel- (CA INDEX NAME)

Relative stereochemistry.

RN

RN 1030841-65-6 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[(1,2,3,4-tetrahydro-1-propyl-8-quinolinyl)methyl]amino]phenyl]-, sodium salt (1:1), (1R,2R)-rel- (CA

# INDEX NAME)

Relative stereochemistry.

RN 1030841-69-0 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[[1,2,3,4-tetrahydro-1-(phenylmethyl)-8-quinolinyl]methyl]amino]phenyl]-, sodium salt (1:1), (1R,2R)-rel- (CA INDEX NAME)

Relative stereochemistry.

RN 1030844-84-8 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[(1,2,3,4-tetrahydro-8-quinolinyl)methyl]amino]phenyl]-, methyl ester, (1R,2R)-rel- (CA INDEX NAME)

RN 1030845-96-5 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[[1,2,3,4-tetrahydro-1-(2-phenoxyethyl)-5-quinolinyl]methyl]amino]phenyl]-, sodium salt (1:1), (1R,2R)-rel- (CA INDEX NAME)

Relative stereochemistry.

RN 1030845-97-6 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[[1,2,3,4-tetrahydro-1-(2-phenoxyethyl)-5-quinolinyl]methyl]amino]phenyl]-, sodium salt (1:1), (1R,2S)-rel- (CA INDEX NAME)

RN 1030846-19-5 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[[1,2,3,4-tetrahydro-1-(2-phenoxyethyl)-5-quinolinyl]methyl]amino]phenyl]-, ethyl ester, <math>(1R,2R)-rel- (CA INDEX NAME)

Relative stereochemistry.

PAGE 1-A

PAGE 2-A

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RN 1030846-20-8 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[[1,2,3,4-tetrahydro-1-(2-phenoxyethyl)-tetrahydro-1-(2-

5-quinolinyl]methyl]amino]phenyl]-, ethyl ester, (1R,2S)-rel- (CA INDEX NAME)

Relative stereochemistry.

PAGE 2-A

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RN 1030848-95-3 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[[1,2,3,4-tetrahydro-1-(2-phenylethyl)-8-quinolinyl]methyl]amino]phenyl]-, (1R,2R)-rel- (CA INDEX NAME)

IT 1030846-63-9P 1030847-20-1P 1030847-38-1P 1030847-41-6P 1030847-45-0P 1030847-51-8P 1030847-63-2P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(preparation of quinolines and related compds. as GPR40 agonists)

RN 1030846-63-9 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[[1,2,3,4-tetrahydro-1-(2-phenylethyl)-8-quinolinyl]methyl](2,2,2-trifluoroacetyl)amino]phenyl]-, methyl ester, (1R,2R)-rel- (CA INDEX NAME)

Relative stereochemistry.

RN 1030847-20-1 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[(2-nitrophenyl)sulfonyl](8-quinolinylmethyl)amino]phenyl]-, methyl ester, (1R,2R)-rel- (CA INDEX NAME)

Relative stereochemistry.

RN 1030847-38-1 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[(2-nitrophenyl)sulfonyl][(1,2,3,4-tetrahydro-8-quinolinyl)methyl]amino]phenyl]-, methyl ester, (1R,2R)-rel-(CA INDEX NAME)

RN 1030847-41-6 CAPLUS

CN 1(2H)-Quinolinecarboxylic acid, 8-[[[4-[(1R,2R)-2-(ethoxycarbonyl)cyclopropyl]phenyl](2,2,2-trifluoroacetyl)amino]methyl]-3,4-dihydro-, 1,1-dimethylethyl ester, rel- (CA INDEX NAME)

Relative stereochemistry.

RN 1030847-45-0 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[(1,2,3,4-tetrahydro-8-quinoliny1)methyl](2,2,2-trifluoroacety1)amino]phenyl]-, methyl ester, (1R,2R)-rel- (CA INDEX NAME)

Relative stereochemistry.

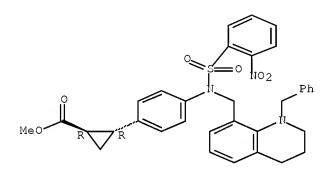
RN 1030847-51-8 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[(2-nitrophenyl)sulfonyl]][(1,2,3,4-tetrahydro-1-propyl-8-quinolinyl)methyl]amino]phenyl]-, methyl ester, (1R,2R)-rel- (CA INDEX NAME)

RN 1030847-63-2 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[(2-nitrophenyl)sulfonyl][[1,2,3,4-tetrahydro-1-(phenylmethyl)-8-quinolinyl]methyl]amino]phenyl]-, methyl ester, (1R,2R)-rel- (CA INDEX NAME)

Relative stereochemistry.



OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD

(1 CITINGS)

REFERENCE COUNT: 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS

RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 3 OF 17 CAPLUS COPYRIGHT 2010 ACS on STN ACCESSION NUMBER: 2008:61860 CAPLUS Full-text

DOCUMENT NUMBER: 148:298903

TITLE: Discovery of novel agonists and antagonists of the

free fatty acid receptor 1 (FFAR1) using virtual

screening

AUTHOR(S): Tikhonova, Irina G.; Sum, Chi Shing; Neumann, Susanne;

Engel, Stanislav; Raaka, Bruce M.; Costanzi, Stefano;

Gershengorn, Marvin C.

CORPORATE SOURCE: Laboratory of Biological Modeling and Clinical

Endocrinology Branch, National Institute of Diabetes and Digestive and Kidney Diseases, National Institutes

of Health, Bethesda, MD, 20892, USA

SOURCE: Journal of Medicinal Chemistry (2008), 51(3), 625-633

CODEN: JMCMAR; ISSN: 0022-2623

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal LANGUAGE: English

The G-protein-coupled receptor free fatty acid receptor 1 (FFAR1), previously named GPR40, is a possible novel target for the treatment of type 2 diabetes. In an attempt to identify new ligands for this receptor, we performed virtual screening (VS) based on 2-dimensional (2D) similarity, 3-dimensional (3D) pharmacophore searches, and docking studies by the structure of known agonists and our model of the ligand binding site, which was validated by mutagenesis. VS of a database of 2.6 million compds. followed by extraction of structural neighbors of functionally confirmed hits resulted in identification of 15 compds. active at FFAR1 either as full agonists, partial agonists, or pure antagonists. Site-directed mutagenesis and docking studies revealed different patterns of ligand-receptor interactions and provided important information on the role of specific amino acids in binding and activation of FFAR1.

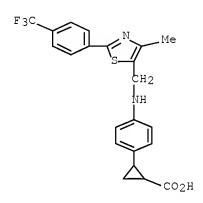
IT 1009031-48-4

RL: PAC (Pharmacological activity); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(discovery of agonists and antagonists of FFAR1 using virtual screening)

RN 1009031-48-4 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[[4-methyl-2-[4-(trifluoromethyl)phenyl]-5-thiazolyl]methyl]amino]phenyl]- (CA INDEX NAME)



OS.CITING REF COUNT: 25 THERE ARE 25 CAPLUS RECORDS THAT CITE THIS

RECORD (25 CITINGS)

REFERENCE COUNT: 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 4 OF 17 CAPLUS COPYRIGHT 2010 ACS on STN ACCESSION NUMBER: 2007:427285 CAPLUS Full-text

DOCUMENT NUMBER: 147:45843

TITLE: Uncovering the pharmacology of the G protein-coupled

receptor GPR40: high apparent constitutive activity in guanosine 5'-O-(3-[35S]thio)triphosphate binding

studies reflects binding of an endogenous agonist

AUTHOR(S): Stoddart, Leigh A.; Brown, Andrew J.; Milligan, Graeme CORPORATE SOURCE: Molecular Pharmacology Group, Division of Biochemistry

and Molecular Biology, Institute of Biomedical and Life Sciences, University of Glasgow, Glasgow, UK

SOURCE: Molecular Pharmacology (2007), 71(4), 994-1005

CODEN: MOPMA3; ISSN: 0026-895X

PUBLISHER: American Society for Pharmacology and Experimental

Therapeutics

DOCUMENT TYPE: Journal LANGUAGE: English

In cells lacking expression of Ca2+-mobilizing G proteins, coexpression of human GPR40 and Gαq allowed medium- and long-chain fatty acids to elevate intracellular [Ca2+]. This was also observed when human embryonic kidney (HEK) 293 cells were transfected with a GPR40-G $\alpha$ q fusion protein. The kinetic of elevation of intracellular [Ca2+] slowed with increasing fatty acid chain length, suggesting different ligand on-rates, whereas the addition of fatty acid-free bovine serum albumin reduced signals, presumably by binding the fatty acids. To allow effective ligand equilibration, GPR40-Gag was used in quanosine 5'-0-(3-[35S]thio)triphosphate ([35S]GTPyS) binding assays. After expression of  $GPR40-G\alpha q$  in HEK293 cells and membrane preparation basal binding of [358]GTPyS in  $G\alpha q$  immunoppts. was high and not elevated substantially by fatty acids. However, treatment of membranes with fatty acid-free bovine serum albumin reduced the basal [35S]GTPyS binding in a concentrationdependent manner and allowed the responsiveness and pharmacol. at GPR40 of each of the fatty acids, thiazolidinediones and a novel small-mol. agonist to be uncovered. Membranes of rat INS-1E cells that express GPR40 endogenously provided similar observations. The high apparent constitutive activity of  $GPR40-G\alpha q$  was also reversed by a small-mol. GPR40 antagonist, and basal [35S]GTPyS binding was prevented by the selective  $G\alpha q/G\alpha 11$  inhibitor YM254890. The current studies provide novel insights into the pharmacol. of GPR40 and indicate that G protein-coupled receptors which respond to fatty acids, and potentially to other lipid ligands, can be occupied by endogenous agonists before assay and that this may mask the pharmacol. of the receptor and may be mistaken for high levels of constitutive activity.

IT 853403-47-1, GSK 250089A

RL: BSU (Biological study, unclassified); PAC (Pharmacological activity); BIOL (Biological study)

(G protein-coupled receptor GPR40 pharmacol.)

RN 853403-47-1 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[[4-methyl-2-[4-(trifluoromethyl)phenyl]-5-thiazolyl]methyl]amino]phenyl]-, (1S,2S)- (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

OS.CITING REF COUNT: 17 THERE ARE 17 CAPLUS RECORDS THAT CITE THIS

RECORD (17 CITINGS)

REFERENCE COUNT: 39 THERE ARE 39 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 5 OF 17 CAPLUS COPYRIGHT 2010 ACS on STN ACCESSION NUMBER: 2007:228788 CAPLUS  $\underline{\text{Full-text}}$ 

DOCUMENT NUMBER: 146:421669

TITLE: Solid phase synthesis and SAR of small molecule

agonists for the GPR40 receptor

AUTHOR(S): McKeown, Stephen C.; Corbett, David F.; Goetz, Aaron S.; Littleton, Thomas R.; Bigham, Eric; Briscoe, Celia

S.; Littleton, Thomas R.; Bigham, Eric; Briscoe, Celia P.; Peat, Andrew J.; Watson, Steve P.; Hickey, Deirdre

М. В.

CORPORATE SOURCE: Molecular Discovery Research, GlaxoSmithKline, Harlow,

Essex, CM19 5AW, UK

SOURCE: Bioorganic & Medicinal Chemistry Letters (2007),

17(6), 1584-1589

CODEN: BMCLE8; ISSN: 0960-894X

PUBLISHER: Elsevier Ltd.

DOCUMENT TYPE: Journal LANGUAGE: English

OTHER SOURCE(S): CASREACT 146:421669

GΙ

AB The discovery, synthesis and structure-activity relationship (SAR) of novel carboxylic acid agonists for GPR40 are described. Aryl propionic acid I, identified from a high throughput screen, was selected for chemical exploration. Compound II was identified as our lead mol. through efficient solid phase combinatorial array chemical and had an attractive in vitro and in vivo pharmacokinetic profile in rat. These ligands may prove useful in establishing a role for GPR40 in insulin regulation.

IT 934279-34-2P 934279-38-6P

RL: CPN (Combinatorial preparation); PAC (Pharmacological activity); BIOL (Biological study); CMBI (Combinatorial study); PREP (Preparation) (solid phase synthesis and SAR of small mol. carboxylic acid agonists for the GPR40 receptor)

RN 934279-34-2 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[(3-phenoxyphenyl)methyl]amino]phenyl](CA INDEX NAME)

RN 934279-38-6 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[([1,1'-biphenyl]-4ylmethyl)amino]phenyl]- (CA INDEX NAME)

$$\texttt{HO_2C} \qquad \qquad \texttt{NH-CH_2} \qquad \qquad \texttt{Ph}$$

THERE ARE 15 CAPLUS RECORDS THAT CITE THIS OS.CITING REF COUNT: 15

RECORD (15 CITINGS)

REFERENCE COUNT: 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS

RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

ANSWER 6 OF 17 CAPLUS COPYRIGHT 2010 ACS on STN ACCESSION NUMBER: 2007:113598 CAPLUS Full-text

DOCUMENT NUMBER: 146:184252

TITLE: Preparation of 2-phenylcyclopropanecarboxylic acid

derivatives having GPR40 receptor agonistic activity

INVENTOR(S): Yasuma, Tsuneo; Negoro, Nobuyuki

PATENT ASSIGNEE(S): Takeda Pharmaceutical Company Limited, Japan

SOURCE: PCT Int. Appl., 100pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent Japanese LANGUAGE:

FAMILY ACC. NUM. COUNT:

PATENT INFORMATION:

PAT	PATENT NO.					KIND DATE				APPL	ICAT	ION I	DATE				
WO	WO 2007013689			A1 20070201					WO 2	006-	JP31	20060728					
	W:	ΑE,	AG,	AL,	AM,	AT,	AU,	ΑZ,	BA,	BB,	BG,	BR,	BW,	BY,	BZ,	CA,	CH,
		CN,	CO,	CR,	CU,	CZ,	DE,	DK,	DM,	DΖ,	EC,	EE,	EG,	ES,	FΙ,	GB,	GD,
		GE,	GH,	GM,	HN,	HR,	HU,	ID,	IL,	IN,	IS,	JP,	ΚE,	KG,	KM,	KN,	KP,
		KR,	KΖ,	LA,	LC,	LK,	LR,	LS,	LT,	LU,	LV,	LY,	MA,	MD,	MG,	MK,	MN,
		MW,	MX,	ΜZ,	NΑ,	NG,	NΙ,	NO,	NΖ,	OM,	PG,	PH,	PL,	PT,	RO,	RS,	RU,
		SC,	SD,	SE,	SG,	SK,	SL,	SM,	SY,	ТJ,	TM,	TN,	TR,	TT,	TZ,	UA,	UG,
		US,	UZ,	VC,	VN,	ZA,	ZM,	ZW									
	RW:	ΑT,	BE,	BG,	CH,	CY,	CZ,	DE,	DK,	EE,	ES,	FI,	FR,	GB,	GR,	HU,	ΙE,
		IS,	ΙΤ,	LT,	LU,	LV,	MC,	NL,	PL,	PT,	RO,	SE,	SI,	SK,	TR,	BF,	ВJ,
		CF,	CG,	CI,	CM,	GA,	GN,	GQ,	GW,	ML,	MR,	ΝE,	SN,	TD,	TG,	BW,	GH,
		GM,	ΚE,	LS,	MW,	MΖ,	NA,	SD,	SL,	SZ,	TZ,	UG,	ZM,	ZW,	AM,	ΑZ,	BY,
		KG,	ΚZ,	MD,	RU,	ΤJ,	TM										
EP	1916	234			A1		2008	0430		EP 2	006-	7823	04	20060728			
	R:	AT,	BE,	BG,	CH,	CY,	CZ,	DE,	DK,	EE,	ES,	FΙ,	FR,	GB,	GR,	HU,	ΙE,
		IS,	ΙΤ,	LI,	LT,	LU,	LV,	MC,	NL,	PL,	PT,	RO,	SE,	SI,	SK,	TR	
PRIORITY	APP	LN.	INFO	.:						JP 2	005-	2220	10	Ž	A 20	0050	729
									WO 2006-JP315444					W 20060728			
OTHER SC	OTHER SOURCE(S):																

GΙ

$$A$$
 $V$ 
 $B$ 
 $W$ 
 $X$ 
 $R^2$ 
 $R^3$ 
 $I$ 
 $H3C$ 
 $O$ 
 $O$ 
 $CH_3$ 
 $CH_3$ 
 $II$ 
 $O$ 
 $OH$ 

Title compds. I [ring A = (un)substituted cyclic group; ring B = (un)substituted cycle; V = bond or spacer; W = (un)substituted alkylene; X = 0 or S; R1, R2 = H, halo, alkyl, or alkoxy; R3 = (un)substituted hydroxy or (un)substituted amino; when V is bond and W is methylene, ring B is neither oxazole nor thiazole.] and salts thereof (except  $2-(2-[[6-(benzyloxy)-2-naphthyl]methoxy]phenyl)cyclopropnecarboxylic acid) were prepared For example, cyclopropnation of <math>(2E)-3-(4-[[4'-(2-ethoxyethoxy)-2',6'-dimethylbiphenyl-3-yl]methoxy]phenyl)acrylic acid Me ester, e.g., prepared from 4-bromo-3,5-dimethylphenol in 4 steps, using diazomethane followed by hydrolysis afforded compound II. In human GPR40 receptor agonistic activity assays, compound II showed the relative activity of 111% compared to <math>\gamma$ -linolenic acid. Compds. I are claimed for the treatment of diabetes.

RL: PAC (Pharmacological activity); RCT (Reactant); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)

(preparation of 2-phenylcyclopropanecarboxylic acid derivs. having GPR40 receptor agonistic activity)

RN 922151-64-2 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[[4'-(2-ethoxyethoxy)-2',6'-dimethyl[1,1'-biphenyl]-3-yl]methyl]amino]-2-fluorophenyl]-, ethyl ester (CA INDEX NAME)

IT 922151-66-4P

RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(preparation of 2-phenylcyclopropanecarboxylic acid derivs. having GPR40 receptor agonistic activity)

RN 922151-66-4 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[[4'-(2-ethoxyethoxy)-2',6'-

dimethyl[1,1'-biphenyl]-3-yl]methyl]amino]-2-fluorophenyl]- (CA INDEX NAME)

OS.CITING REF COUNT: 3 THERE ARE 3 CAPLUS RECORDS THAT CITE THIS RECORD

(3 CITINGS)

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS

RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

ANSWER 7 OF 17 CAPLUS COPYRIGHT 2010 ACS on STN ACCESSION NUMBER: 2006:410015 CAPLUS Full-text

DOCUMENT NUMBER: 144:450627

TITLE: Preparation of novel nitrogenous heterocyclic

compounds and salts thereof as antibacterial agents

INVENTOR(S): Kiyoto, Taro; Tsutsui, Yasuhiro; Tanaka, Tadashi;

Shimada, Sumie; Nomura, Nobuhiko; Noguchi, Toshiya;

Ushiyama, Fumihito; Ushiki, Yasunobu

PATENT ASSIGNEE(S): Toyama Chemical Co., Ltd., Japan; Taisho

Pharmaceutical Co., Ltd.

SOURCE: PCT Int. Appl., 281 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT:

PATENT INFORMATION:

PATENT NO.				KIN	D	DATE			APPLICATION NO.					DATE			
WO 2006046552				A1	_	20060504		WO 2005-JP19586					20051025				
	W:	ΑE,	AG,	AL,	AM,	AT,	AU,	AZ,	BA,	BB,	BG,	BR,	BW,	BY,	BZ,	CA,	CH,
		CN,	CO,	CR,	CU,	CZ,	DE,	DK,	DM,	DZ,	EC,	EE,	EG,	ES,	FI,	GB,	GD,
		GE,	GH,	GM,	HR,	HU,	ID,	IL,	IN,	IS,	JP,	ΚE,	KG,	KM,	KP,	KR,	KZ,
		LC,	LK,	LR,	LS,	LT,	LU,	LV,	LY,	MA,	MD,	MG,	MK,	MN,	MW,	MX,	MZ,
		NA,	NG,	NI,	NO,	NΖ,	OM,	PG,	PH,	PL,	PT,	RO,	RU,	SC,	SD,	SE,	SG,
		SK,	SL,	SM,	SY,	ТJ,	TM,	TN,	TR,	TT,	TZ,	UA,	UG,	US,	UΖ,	VC,	VN,
		YU,	ZA,	ZM,	ZW												
	RW:	AT,	BE,	BG,	CH,	CY,	CZ,	DE,	DK,	EE,	ES,	FΙ,	FR,	GB,	GR,	HU,	IE,
		IS,	ΙT,	LT,	LU,	LV,	MC,	NL,	PL,	PT,	RO,	SE,	SI,	SK,	TR,	BF,	ВJ,
		CF,	CG,	CI,	CM,	GΑ,	GN,	GQ,	GW,	ML,	MR,	ΝE,	SN,	TD,	TG,	BW,	GH,
		GM,	KE,	LS,	MW,	MΖ,	NA,	SD,	SL,	SZ,	TZ,	UG,	ZM,	ZW,	AM,	ΑZ,	BY,
		KG,	KΖ,	MD,	RU,	ТJ,	TM										
RITY APPLN. INFO.:				.:						JP 2	004-	3119	42		A 2	0041	027
D COUDCE (C).					MAD.	ידי ער כו	1///	1506	27								

PRIOF

OTHER SOURCE(S): MARPAT 144:450627

GΙ

Compds. represented by the general formula (I) including quinoline or AB isoquinoline derivs., or salts thereof [wherein R1 = halo, cyano, (un)protected CO2H, (un)substituted alkyl, alkoxy, acyloxy; R2-R5 = H, halo, cyano, (un)protected CO2H, (un)substituted alkyl, alkenyl, alkoxy, NH2, CONH2; Z1, Z2 = N or (un)substituted CH, provided that at least one of Z1 and Z2 = N; X1 = 0, S, S(0), S(0)2, each (un)substituted NH or CH2; X2 = a bond, CO, (un) substituted NH; X3 = C1-4 alkylene or a bond; R6 = Q-Q6; wherein R1 = morethan one H, halo, (un) substituted HO or CO2H or each (un) substituted NH2, lower alkyl, alkoxy, or CONH2; R11a, R11 b, R11c = H, halo, (un)protected HO or CO2H, (un) substituted NH2, lower alkyl, alkoxy, CONH2; R12 = -X6-X4-R14, -X7-C(:NH)-NH-X5-R14 -X7-CONH-R14; wherein R14 = H, (un)protected CO2H, each (un) substituted cycloalkyl, cycloalkenyl, aralkyl, aryl, or heterocyclyl; X4 = a bond, O, S, CO; X5 = a bond, (un)substituted alkylene; X6 = each (un) substituted alkylene, alkenylene, or alkynylene, SO2; X7 = a bond, (un) substituted alkylene; R13 = H, (un) substituted NH2, each (un) substituted alkyl or aryl] or salts thereof are prepared These compds. have potent antibacterial activity against Gram-neq., Gram-pos., and resistant bacteria with high safety and are therefore useful as excellent antibacterial agents. Thus, reductive alkylation of 2-(4-aminopiperidin-1-y1)-1-(7methoxyisoquinolin-1- yl)ethanol with 1,4-benzodioxan-6-carboxaldehyde using NaBH4 followed treatment with 4 N HCl/dioxane gave 2-(4-((2,3dihydrobenzo[b][1,4]dioxin-6-yl)methylamino)piperidin-1-yl)-1- (7methoxyisoquinolin-1-yl)ethanol hydrochloride (II). II showed min. inhibitory concentration of  $0.0313~\mu g/mL$  against both Staphylococcus aureus FDA209 and methicillin-resistant S. aureus F3095 (MRSA).

IT 885689-62-3P

RN

RL: PAC (Pharmacological activity); RCT (Reactant); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)

(preparation of nitrogenous heterocyclic compds. as antibacterial agents) 885689-62-3 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[8-[[[1-[2-(2,3-dihydro-1,4-benzodioxin-6-yl)ethyl]-4-piperidinyl]carbonyl]amino]-2-methoxy-5-quinolinyl]-, methyl ester (CA INDEX NAME)

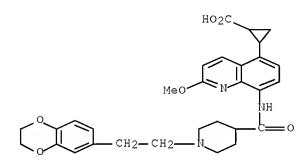
IT 885689-64-5P

RN

RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(preparation of nitrogenous heterocyclic compds. as antibacterial agents) 885689-64-5 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[8-[[[1-[2-(2,3-dihydro-1,4-benzodioxin-6-yl)ethyl]-4-piperidinyl]carbonyl]amino]-2-methoxy-5-quinolinyl]- (CA INDEX NAME)



OS.CITING REF COUNT: 3 THERE ARE 3 CAPLUS RECORDS THAT CITE THIS RECORD

(3 CITINGS)

REFERENCE COUNT: 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS

RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 8 OF 17 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2006:188876 CAPLUS Full-text

DOCUMENT NUMBER: 144:432528

TITLE: Synthesis and activity of small molecule GPR40

agonists

AUTHOR(S): Garrido, Dulce M.; Corbett, David F.; Dwornik, Kate

A.; Goetz, Aaron S.; Littleton, Thomas R.; McKeown, Steve C.; Mills, Wendy Y.; Smalley, Terrence L.;

Briscoe, Celia P.; Peat, Andrew J.

CORPORATE SOURCE: GlaxoSmithKline Research and Development, Research

Triangle Park, NC, 27709, USA

SOURCE: Bioorganic & Medicinal Chemistry Letters (2006),

16(7), 1840-1845

CODEN: BMCLE8; ISSN: 0960-894X

PUBLISHER: Elsevier B.V.

DOCUMENT TYPE: Journal LANGUAGE: English

OTHER SOURCE(S): CASREACT 144:432528

The identification and structure-activity relationships of a novel series of GPR40 agonists based on a 3-(4-{[N-alkyl]amino}phenyl)propanoic acid template is described. Structural modifications to the original screening hit yielded compds. with a 100-fold increase in potency at the human GPR40 receptor and pEC50s in the low nanomolar range. The carboxylic acid moiety is not critical for activity but typically elicits an agonistic response higher than those observed with carboxamide replacements. These compds. may prove useful in unraveling the therapeutic potential of this receptor for the treatment of Type 2 diabetes.

IT 853403-21-1P 853403-33-5P 853403-46-0P 853403-47-1P

RL: PAC (Pharmacological activity); RCT (Reactant); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent)

(preparation and activity of alkylaminophenylpropanoic acids as GPR40 agonists)

RN 853403-21-1 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[(3-phenoxyphenyl)methyl]amino]phenyl], (1R,2R)-rel- (CA INDEX NAME)

Relative stereochemistry.

RN 853403-33-5 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[[4-methyl-2-[4-(trifluoromethyl)phenyl]-5-thiazolyl]methyl]amino]phenyl]-, (1R,2R)-rel-(CA INDEX NAME)

Relative stereochemistry.

RN 853403-46-0 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[(3-phenoxyphenyl)methyl]amino]phenyl]-, (1S,2S)- (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

RN 853403-47-1 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[[4-methyl-2-[4-(trifluoromethyl)phenyl]-5-thiazolyl]methyl]amino]phenyl]-, (1S,2S)- (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

IT 853403-45-9P 853403-50-6P

RL: PAC (Pharmacological activity); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation)

(preparation and activity of alkylaminophenylpropanoic acids as GPR40 agonists)

RN 853403-45-9 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[(3-phenoxyphenyl)methyl]amino]phenyl]-, (1R,2R)- (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).

RN 853403-50-6 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[[4-methyl-2-[4-(trifluoromethyl)phenyl]-5-thiazolyl]methyl]amino]phenyl]-, (1R,2S)-rel-(-)- (CA INDEX NAME)

Rotation (-). Absolute stereochemistry unknown.

OS.CITING REF COUNT: 30 THERE ARE 30 CAPLUS RECORDS THAT CITE THIS

RECORD (30 CITINGS)

REFERENCE COUNT: 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS

RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 9 OF 17 CAPLUS COPYRIGHT 2010 ACS on STN ACCESSION NUMBER: 2005:570889 CAPLUS  $\underline{\text{Full-text}}$ 

DOCUMENT NUMBER: 143:97111

TITLE: Preparation of cyclopropane amine derivatives as

aggrecanase and MMP inhibitors

INVENTOR(S):
Inaba, Takashi; Haas, Julia; Shiozaki, Makoto;

Littman, Nicole M.; Yasue, Katsutaka; Andrews, Steven W.; Sakai, Atushi; Fryer, Andrew M.; Matsuo, Takafumi; Laird, Ellen R.; Suma, Akira; Shinozaki, Yuichi; Hori,

Yoshikazu; Imai, Hiroto; Negoro, Tamotsu

PATENT ASSIGNEE(S): Japan Tobacco Inc., Japan SOURCE: PCT Int. Appl., 455 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.					KIN	D	DATE		APPLICATION NO.						DATE			
WO WO							20050630 20050909						20041214					
	W:	CN, GE, LK,	CO, GH, LR,	CR, GM, LS,	CU, HR, LT,	CZ, HU, LU,	AU, DE, ID, LV, PL,	DK, IL, MA,	DM, IN, MD,	DZ, IS, MG,	EC, JP, MK,	EE, KE, MN,	EG, KG, MW,	ES, KP, MX,	FI, KR, MZ,	GB, KZ, NA,	GD, LC, NI,	
	R₩:	TJ, BW, AZ, EE, RO,	TM, GH, BY, ES, SE,	TN, GM, KG, FI, SI,	TR, KE, KZ, FR,	TT, LS, MD, GB, TR,	TZ, MW, RU, GR, BF,	UA, MZ, TJ, HU,	UG, NA, TM, IE,	US, SD, AT, IS,	UZ, SL, BE, IT,	VC, SZ, BG, LT,	VN, TZ, CH, LU,	YU, UG, CY, MC,	ZA, ZM, CZ, NL,	ZM, ZW, DE, PL,	ZW AM, DK, PT,	
AU	2004									AU 2004-299455						20041214		
	2549 1 <b>6</b> 94				A1 20050630 A2 20060830				CA 2004-2549660 EP 2004-814080									
	R:	IE,	SI,	LT,	LV,		ES, RO,											
JР	BA, HR, IS, N 1901971 P 2007516982 A 2006005248			r	A T		20070124 20070628 20071031			CN 2004-80037406 JP 2006-545808 ZA 2006-5248					20041214			

US 20060199826	A1	20060907	US	2004-11773		20041215
US 7 <b>3</b> 51 <b>82</b> 5	B2	20080401				
IN 2006KN01655	A	20070511	IN	2006-KN1655		20060614
KR 2006132615	A	20061221	KR	2006-711793		20060615
US 20080261994	A1	20081023	US	2008-16755		20080118
US 20080306258	A1	20081211	US	2008-149683		20080506
PRIORITY APPLN. INFO.:			US	2003-529116P	P	20031215
			MO	2004-US41852	$\mathbb{W}$	20041214
			US	2004-11773	A1	20041215
			US	2008-16755	A1	20080118

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT OTHER SOURCE(S): CASREACT 143:97111; MARPAT 143:97111 GI

$$R^1$$
 $S_{02}$ 
 $R^4$ 
 $NH$ 
 $H_{02C}$ 
 $NH$ 
 $R_{10}$ 
 $R_{11}$ 
 $R_{11$ 

Title compds. I [R1 = (un)substituted alkyl, -(CH2)m-X-(CH2)n-A; m = 0-6; n = AΒ 0-6; X = linker such as single bond, alkylene group, alkenylene group, etc.; A = substituted hydrocarbon ring or heterocycle; R2 and R3 independently = -(CH2)p-X1-(CH2)q-A1, -(CH2)x-X2-(CH2)y-R7; p = 0-6; q = 0-6; X1 = linker suchas -0-, -C0-, -C00-, etc.; A1 = (un)substituted hydrocarbon ring or heterocycle; x = 0-6; y = 0-6; X2 = 1inker such as -0CO-, alkynylene group, single bond, etc.; R7 = H, halo, OH, etc.; R4 = SH, -CH2SH, -CH2OH, etc.; R5 and R6 independently = -(CH2)x-X3-(CH2)y-A3; -(CH2)x-X4-(CH2)y-R8; X3 = linker such as alkylene group, -0-, -C0-, etc.; A3 = (un)substituted hydrocarbon ring or heterocycle; X4 = linker such as -OCO-, -COO-, single bond, etc.; R8 = NO2, CN, NH2, etc.] and their pharmaceutically acceptable salts, are prepared and disclosed as inhibitors of aggrecanase and MMP. Thus, e.g., II was prepared by deprotection of com. available (1R,2S)-1-tert-butoxycarbonylamino-2phenylcyclopropanecarboxylic acid followed by coupling with 4chlorobiphenylsulfonic acid chloride. The activity of I to inhibit aggrecanase and MMP was evaluated using particle assay and fluorescence assay, resp., and it was revealed that compds. of the invention displayed IC50 values in the range of less than  $0.1~\mu\mathrm{M}$  up to not less than  $10~\mu\mathrm{M}$  in both assays. as inhibitor of aggrecanase and MMP should prove useful in the treatment of osteoarthritis and rheumatoid arthritis. Pharmaceutical compns. comprising I are disclosed.

856449-63-3P 856449-64-4P 856451-69-9P

RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(preparation of cyclopropane amine derivs. as aggrecanase and  $\ensuremath{\mathsf{MMP}}$  inhibitors)

RN 856440-01-2 CAPLUS

CN Cyclopropanecarboxylic acid, 1-[[(4'-chloro[1,1'-biphenyl]-4-yl)sulfonyl]amino]-2-[3-[(3-pyridinylmethyl)amino]phenyl]-, (1R,2S)-rel-(CA INDEX NAME)

Relative stereochemistry.

RN 856440-60-3 CAPLUS

CN Cyclopropanecarboxylic acid, 1-[[(4'-chloro[1,1'-biphenyl]-4-yl)sulfonyl]amino]-2-[3-[(phenylmethyl)amino]phenyl]-, (1R,2S)-rel- (CA INDEX NAME)

Relative stereochemistry.

RN 856440-79-4 CAPLUS

CN Cyclopropanecarboxylic acid, 1-[[(4'-chloro[1,1'-biphenyl]-4-yl)sulfonyl]amino]-2-[3-[(2-pyridinylcarbonyl)amino]phenyl]-, (1R,2S)-rel-(CA INDEX NAME)

RN 856440-80-7 CAPLUS
CN Cyclopropanecarboxylic acid, 1-[[(4'-chloro[1,1'-biphenyl]-4-yl)sulfonyl]amino]-2-[3-[(4-pyridinylcarbonyl)amino]phenyl]-, (1R,2S)-rel-(CA INDEX NAME)

Relative stereochemistry.

RN 856440-81-8 CAPLUS
CN Cyclopropanecarboxylic acid, 1-[[(4'-chloro[1,1'-biphenyl]-4-yl)sulfonyl]amino]-2-[3-[(3-pyridinylcarbonyl)amino]phenyl]-, (1R,2S)-rel-(CA INDEX NAME)

Relative stereochemistry.

RN 856441-07-1 CAPLUS
CN Cyclopropanecarboxylic acid, 1-[[(4'-chloro[1,1'-biphenyl]-4-

yl)sulfonyl]amino]-2-[3-[(1H-imidazol-5-ylmethyl)amino]phenyl]-, (1R,2S)-rel- (CA INDEX NAME)

Relative stereochemistry.

RN 856441-18-4 CAPLUS

CN Cyclopropanecarboxylic acid, 1-[[(4'-chloro[1,1'-biphenyl]-4-yl)sulfonyl]amino]-2-[3-[[(1-methyl-1H-imidazol-2-yl)methyl]amino]phenyl]-, (1R,2S)-rel- (CA INDEX NAME)

Relative stereochemistry.

RN 856441-29-7 CAPLUS

CN Cyclopropanecarboxylic acid, 1-[[(4'-chloro[1,1'-biphenyl]-4-yl)sulfonyl]amino]-2-[3-[(1H-imidazol-2-ylmethyl)amino]phenyl]-, (1R,2S)-rel- (CA INDEX NAME)

RN 856441-46-8 CAPLUS

CN Cyclopropanecarboxylic acid, 1-[[[5-(4-chlorophenyl)-2-thienyl]sulfonyl]amino]-2-[3-[(3-pyridinylmethyl)amino]phenyl]-, (1R,2S)-rel- (CA INDEX NAME)

Relative stereochemistry.

RN 856442-03-0 CAPLUS

CN Cyclopropanecarboxylic acid, 1-[[[5-(4-chlorophenyl)-2-thienyl]sulfonyl]amino]-2-[3-[methyl(3-pyridinylmethyl)amino]phenyl]-, (1R,2S)-rel- (CA INDEX NAME)

Relative stereochemistry.

RN 856443-42-0 CAPLUS

CN Cyclopropanecarboxylic acid, 1-[[[5-(4-chlorophenyl)-2-thienyl]sulfonyl]amino]-2-[3-[(3-pyridinylmethyl)amino]phenyl]-, hydrochloride (1:1), (1S,2R)- (CA INDEX NAME)

Absolute stereochemistry.

RN 856443-52-2 CAPLUS

CN Cyclopropanecarboxylic acid, 1-[[[5-(4-chlorophenyl)-2-thienyl]sulfonyl]amino]-2-[3-[methyl(3-pyridinylmethyl)amino]phenyl]-, (1S,2R)- (CA INDEX NAME)

Absolute stereochemistry.

RN 856443-82-8 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[3-[(3-pyridinylmethyl)amino]phenyl]-1-[[[5-[5-(trifluoromethyl)-3-isoxazolyl]-2-thienyl]sulfonyl]amino]-, hydrochloride (1:1), (1R,2S)-rel- (CA INDEX NAME)

Relative stereochemistry.

● HCl

RN 856443-83-9 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[3-[methyl(3-pyridinylmethyl)amino]phenyl]-1-[[[5-[5-(trifluoromethyl)-3-isoxazolyl]-2-thienyl]sulfonyl]amino]-, hydrochloride (1:1), (1R,2S)-rel- (CA INDEX NAME)

RN 856444-20-7 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[3-[(4-morpholinylcarbonyl)amino]phenyl]-1[[[5-[5-(trifluoromethyl)-3-isoxazolyl]-2-thienyl]sulfonyl]amino]-,
(1R,2S)-rel- (CA INDEX NAME)

Relative stereochemistry.

RN 856444-21-8 CAPLUS

CN Cyclopropanecarboxylic acid, 1-[[[5-(4-chlorophenyl)-2-thienyl]sulfonyl]amino]-2-[3-[(4-morpholinylcarbonyl)amino]phenyl]-, (1R,2S)-rel- (CA INDEX NAME)

Relative stereochemistry.

RN 856444-30-9 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[3-[[2-(4-morpholinyl)acetyl]amino]phenyl]-1-[[[5-[5-(trifluoromethyl)-3-isoxazolyl]-2-thienyl]sulfonyl]amino]-, hydrochloride (1:1), (1R,2S)-rel- (CA INDEX NAME)

Relative stereochemistry.

RN 856444-31-0 CAPLUS

CN Cyclopropanecarboxylic acid, 1-[[[5-(4-chlorophenyl)-2-thienyl]sulfonyl]amino]-2-[3-[[2-(4-morpholinyl)acetyl]amino]phenyl]-, hydrochloride (1:1), (1R,2S)-rel- (CA INDEX NAME)

Relative stereochemistry.

● HCl

RN 856449-43-9 CAPLUS

CN Cyclopropanecarboxylic acid, 1-[[[5-(4-chlorophenyl)-2-thienyl]sulfonyl]amino]-2-[3-[(3-pyridinylmethyl)amino]phenyl]-, (1S,2R)-(CA INDEX NAME)

Absolute stereochemistry.

RN 856449-48-4 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[3-[(3-pyridinylmethyl)amino]phenyl]-1-[[[5-[5-(trifluoromethyl)-3-isoxazolyl]-2-thienyl]sulfonyl]amino]-, (1R,2S)-rel- (CA INDEX NAME)

Relative stereochemistry.

RN 856449-49-5 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[3-[methyl(3-pyridinylmethyl)amino]phenyl]-1-[[[5-[5-(trifluoromethyl)-3-isoxazolyl]-2-thienyl]sulfonyl]amino]-, (1R,2S)-rel- (CA INDEX NAME)

Relative stereochemistry.

RN 856449-63-3 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[3-[[2-(4-morpholinyl)acetyl]amino]phenyl]-1-[[[5-[5-(trifluoromethyl)-3-isoxazolyl]-2-thienyl]sulfonyl]amino]-, (1R,2S)-rel- (CA INDEX NAME)

RN 856449-64-4 CAPLUS

CN Cyclopropanecarboxylic acid, 1-[[[5-(4-chlorophenyl)-2-thienyl]sulfonyl]amino]-2-[3-[[2-(4-morpholinyl)acetyl]amino]phenyl]-, (1R,2S)-rel- (CA INDEX NAME)

Relative stereochemistry.

RN 856451-69-9 CAPLUS

CN Cyclopropanecarboxylic acid, 1-[[(4'-chloro[1,1'-biphenyl]-4-yl)sulfonyl]amino]-2-[3-[[(2-methyl-1H-imidazol-1-yl)methyl]amino]phenyl]-, (1R,2S)-rel- (CA INDEX NAME)

OS.CITING REF COUNT: 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD (2 CITINGS)

L4 ANSWER 10 OF 17 CAPLUS COPYRIGHT 2010 ACS on STN ACCESSION NUMBER: 2005:564633 CAPLUS  $\underline{\text{Full-text}}$ 

DOCUMENT NUMBER: 143:97110

TITLE: Preparation of cyclopropane amine derivatives as

aggrecanase and MMP inhibitors

INVENTOR(S): Fryer, Andrew M.; Shiozaki, Makoto; Littmann, Nicole

M.; Inaba, Takashi; Andrews, Steven W.; Yasue, Katsutaka; Laird, Ellen R.; Yokota, Masahiro; Haas, Julia; Imai, Hiroto; Maeda, Katsuya; Shinozaki,

Yuichi; Hori, Yoshikazu

PATENT ASSIGNEE(S): Japan Tobacco Inc., Japan SOURCE: PCT Int. Appl., 197 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PA:	PATENT NO.						DATE		APPLICATION NO.						DATE			
WO	2005	A1 20050			0630	0 WO 2004-US41851						20041214						
	W:	ΑE,	AG,	AL,	AM,	AT,	ΑU,	AZ,	BA,	ВВ	BG,	BR,	BW,	BY,	BZ,	CA,	CH,	
		CN,	CO,	CR,	CU,	CZ,	DE,	DK,	DM,	DZ	, EC,	EE,	EG,	ES,	FI,	GB,	GD,	
		GE,	GH,	GM,	HR,	HU,	ID,	IL,	IN,	IS	, JP,	ΚE,	KG,	KP,	KR,	ΚZ,	LC,	
		LK,	LR,	LS,	LT,	LU,	LV,	MA,	MD,	MG	, MK,	MN,	MW,	MX,	MZ,	NA,	NI,	
		NO,	NZ,	OM,	PG,	PH,	PL,	PT,	RO,	RU	, SC,	SD,	SE,	SG,	SK,	SL,	SY,	
		ТJ,	TM,	TN,	TR,	TT,	TZ,	UA,	UG,	US	, UZ,	VC,	VN,	YU,	ZA,	ZM,	ZW	
	RW:	BW,	GH,	GM,	ΚE,	LS,	MW,	MZ,	NΑ,	SD	, SL,	SZ,	TZ,	UG,	ZM,	ZW,	AM,	
		AZ,	BY,	KG,	KΖ,	MD,	RU,	ТJ,	TM,	ΑT	, BE,	BG,	CH,	CY,	CZ,	DE,	DK,	
		EE,	ES,	FI,	FR,	GB,	GR,	HU,	ΙE,	IS	, IT,	LT,	LU,	MC,	NL,	PL,	PT,	
		RO,	SE,	SI,	SK,	TR,	BF,	ВJ,	CF,	CG	, CI,	CM,	GA,	GN,	GQ,	GW,	ML,	
		MR,	NE,	SN,	TD,	ΤG												
AU	2004		A1		0630	AU 2004-299454					20041214							
CA	2549	A1	A1 20050630			CA 2004-2549598					20041214							
EP	1694638				A1	A1 20060830			EP 2004-814079					20041214				
	R:	AT,	BE,	CH,	DE,	DK,	ES,	FR,	GB,	GR	, IT,	LI,	LU,	NL,	SE,	MC,	PT,	
		ΙE,	SI,	LT,	LV,	FI,	RO,	MK,	CY,	AL	, TR,	BG,	CZ,	EE,	HU,	PL,	SK,	
		BA,	HR,	IS,	YU													
	CN 1894206					20070110			CN 2004-80037396					20041214				
	JP 2007516981																	
ZA	ZA 2006005247						2007	1031	ZA 2006-5247					20041214				
US	US 20050222146				A1	20051006			US 2004-11781									
IN	IN 2006KN01460					20070504			IN 2006-KN1460						20060530			
KR	KR 2006109937				Α		2006	1023		KR	2006-	7118	51		2	0060	615	
US	US 20080242656						2008	1002	1	US	2007-	7651	36		2	0070	619	
RIORIT	ORITY APPLN. INFO.:								1	US	2003-	5291	17P		P 2	0031	215	
									1	WO	2004-	US41	851		W 2	0041	214	
									1	US	2004-	1178	1		B1 2	0041	215	

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT OTHER SOURCE(S): CASREACT 143:97110; MARPAT 143:97110 GI

<sup>\*</sup> STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

AΒ Title compds. I [R1 = -W-A-W1-A1; W = -(CH2)m-X-(CH2)n-; W1 = -(CH2)p-X1-(CH2)q-; m = 0-6; n = 0-6; p = 0-6; q = 0-6; X and X1 independently = linker such as single bond, alkylene group, alkenylene group, etc.; A = (un) substituted hydrocarbon ring or heterocycle; A1 = substituted hydrocarbon ring or heterocycle or A and A1 together may form (un)substituted hydrocarbon ring; R2 = -(CH2)p-X2-(CH2)q-A2, -(CH2)x-X2-(CH2)y-R8; X2 = linker such as -0-, -CO-, -COO-, etc.; A2 = (un)substituted hydrocarbon ring or heterocycle; x = 0-6; y = 0-6; R8 = H, halo, OH, etc.; R3 and R4 independently = -(CH2)x-X3- $(CH2)_{V}-A3$ ,  $-(CH2)_{X}-X4-(CH2)_{V}-R9$ ; X3 = linker such as <math>-OCO-, alkynylene group, single bond, etc.; A3 = (un)substituted hydrocarbon ring or heterocycle; R9 = NO2, CN, NH2, etc.; X4 = linker such as single bond, alkylene group, alkenylene group, etc.; R5 = SH, -CH2SH, -CH2OH, etc.; R6 and R7 independently = -(CH2)x-X5-(CH2)y-A4; -(CH2)x-X6-(CH2)y-R10; X5 = linker such as alkylenegroup, -O-, -CO-, etc.; A4 = (un)substituted hydrocarbon ring or heterocycle; X6 = linker such as -OCO-, -COO-, single bond, etc.; R10 = NO2, CN, NH2, etc.] and their pharmaceutically acceptable salts, are prepared and disclosed as inhibitors of aggrecanase and MMP. Thus, e.g., II was prepared by deprotection of com. available (1R,2S)-1-tert-butoxycarbonylamino-2phenylcyclopropanecarboxylic acid and subsequent coupling with 4chlorobiphenylsulfonic acid chloride followed by esterification/alkylation/hydrolysis sequence. The activity of I to inhibit aggrecanase and MMP was evaluated using particle assay and fluorescence assay, resp., and it was revealed that compds. of the invention displayed IC50 values in the range of less than  $0.1~\mu\mathrm{M}$  up to not less than  $10~\mu\mathrm{M}$  in both assays. as inhibitor of aggrecanase and MMP should prove useful in the treatment of osteoarthritis and rheumatoid arthritis. Pharmaceutical compns. comprising I are disclosed.

IT 856431-36-2P 856431-38-4P 856431-40-8P 856431-48-6P 856432-17-2P 856432-18-3P 856432-20-7P

RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(preparation of cyclopropane amine derivs. as aggrecanase and MMP inhibitors)

RN 856431-36-2 CAPLUS

CN Cyclopropanecarboxylic acid, 1-[[(4'-chloro[1,1'-biphenyl]-4-yl)sulfonyl][2-[[(trifluoromethyl)sulfonyl]amino]ethyl]amino]-2-[3-[[2-(1-piperidinyl)acetyl]amino]phenyl]-, hydrochloride (1:1), (1R,2S)-rel- (CA INDEX NAME)

RN 856431-38-4 CAPLUS

CN Cyclopropanecarboxylic acid, 1-[[(4'-chloro[1,1'-biphenyl]-4-yl)sulfonyl][2-[[(trifluoromethyl)sulfonyl]amino]ethyl]amino]-2-[3-[[2-(1-piperidinyl)ethyl]amino]phenyl]-, hydrochloride (1:1), (1R,2S)-rel- (CA INDEX NAME)

Relative stereochemistry.

RN 856431-40-8 CAPLUS

CN Benzoic acid, 3-[[[(1R,2S)-1-carboxy-2-[3-[[2-(1-piperidinyl)ethyl]amino]phenyl]cyclopropyl][(4'-chloro[1,1'-biphenyl]-4-yl)sulfonyl]amino]methyl]-, hydrochloride (1:1), rel- (CA INDEX NAME)

Relative stereochemistry.

RN 856431-48-6 CAPLUS

CN Benzoic acid, 3-[[[(1R,2S)-1-carboxy-2-[3-[(3-pyridinylcarbonyl)amino]phenyl]cyclopropyl][(4'-chloro[1,1'-biphenyl]-4-yl)sulfonyl]amino]methyl]-, rel- (CA INDEX NAME)

RN 856432-17-2 CAPLUS

CN Cyclopropanecarboxylic acid, 1-[[(4'-chloro[1,1'-biphenyl]-4-yl)sulfonyl][2-[[(trifluoromethyl)sulfonyl]amino]ethyl]amino]-2-[3-[[2-(1-piperidinyl)acetyl]amino]phenyl]-, (1R,2S)-rel- (CA INDEX NAME)

Relative stereochemistry.

RN 856432-18-3 CAPLUS

CN Cyclopropanecarboxylic acid, 1-[[(4'-chloro[1,1'-biphenyl]-4-yl)sulfonyl][2-[[(trifluoromethyl)sulfonyl]amino]ethyl]amino]-2-[3-[[2-(1-piperidinyl)ethyl]amino]phenyl]-, (1R,2S)-rel- (CA INDEX NAME)

Relative stereochemistry.

RN 856432-20-7 CAPLUS

CN Benzoic acid, 3-[[[(1R,2S)-1-carboxy-2-[3-[[2-(1-piperidinyl)ethyl]amino]phenyl]cyclopropyl][(4'-chloro[1,1'-biphenyl]-4-yl)sulfonyl]amino]methyl]-, rel- (CA INDEX NAME)

Relative stereochemistry.

IT 1044763-30-5 1044763-36-1 1044763-82-7 1044797-26-3

RL: RCT (Reactant); RACT (Reactant or reagent)
 (preparation of cyclopropane amine derivs. as aggrecanase and MMP
 inhibitors)

RN 1044763-30-5 CAPLUS

CN Cyclopropanecarboxylic acid, 1-[[(4'-chloro[1,1'-biphenyl]-4-yl)sulfonyl][2-[[(trifluoromethyl)sulfonyl]amino]ethyl]amino]-2-[3-[[2-(1-piperidinyl)acetyl]amino]phenyl]-, methyl ester, (1R,2S)-rel- (CA INDEX NAME)

Relative stereochemistry.

RN 1044763-36-1 CAPLUS

CN Cyclopropanecarboxylic acid, 1-[[(4'-chloro[1,1'-biphenyl]-4-yl)sulfonyl][2-[[(trifluoromethyl)sulfonyl]amino]ethyl]amino]-2-[3-[[2-(1-piperidinyl)ethyl]amino]phenyl]-, methyl ester, (1R,2S)-rel- (CA INDEX NAME)

RN 1044763-82-7 CAPLUS

CN Benzoic acid, 3-[[[(4'-chloro[1,1'-biphenyl]-4-yl)sulfonyl][(1R,2S)-1-(methoxycarbonyl)-2-[3-[[2-(1-piperidinyl)ethyl]amino]phenyl]cyclopropyl]amino]methyl]-, methyl ester, rel- (CA INDEX NAME)

Relative stereochemistry.

RN 1044797-26-3 CAPLUS

CN Benzoic acid, 3-[[[(4'-chloro[1,1'-biphenyl]-4-yl)sulfonyl][(1R,2S)-1-(methoxycarbonyl)-2-[3-[(3-pyridinylcarbonyl)amino]phenyl]cyclopropyl]amino]methyl]-, methyl ester, rel- (CA INDEX NAME)

OS.CITING REF COUNT: 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD

(2 CITINGS)

REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS

RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 11 OF 17 CAPLUS COPYRIGHT 2010 ACS on STN ACCESSION NUMBER: 2005:493575 CAPLUS Full-text

DOCUMENT NUMBER: 143:43685

TITLE: Preparation of aminophenylcyclopropylcarboxylates as G

protein coupled receptor 40 (GPR40) agonists.

INVENTOR(S): Corbett, David Francis; Dwornik, Kate Anna; Garrido,

Dulce Maria; McKeown, Stephen Carl; Mills, Wendy Yoon;

Peat, Andrew James; Smalley, Terrence Lee, Jr.

PATENT ASSIGNEE(S): Smithkline Beecham Corporation, USA

SOURCE: PCT Int. Appl., 88 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

P	PATENT NO.						KIND DATE			APPLICATION NO.							DATE		
M.	2005	2005051890					A1 20050609			WO 2	004-	US38:	20041115						
	W:	ΑE,	AG,	AL,	AM,	ΑT,	ΑU,	AZ,	BA,	BB,	BG,	BR,	BW,	BY,	BZ,	CA,	CH,		
		CN,	CO,	CR,	CU,	CZ,	DE,	DK,	DM,	DZ,	EC,	EE,	EG,	ES,	FI,	GB,	GD,		
		GE,	GH,	GM,	HR,	HU,	ID,	IL,	IN,	IS,	JP,	KE,	KG,	KP,	KR,	KΖ,	LC,		
		LK,	LR,	LS,	LT,	LU,	LV,	MA,	MD,	MG,	MK,	MN,	MW,	MX,	MZ,	NA,	NI,		
		NO,	NΖ,	OM,	PG,	PH,	PL,	PT,	RO,	RU,	SC,	SD,	SE,	SG,	SK,	SL,	SY,		
		ΤJ,	TM,	TN,	TR,	TT,	TZ,	UA,	UG,	US,	UΖ,	VC,	VN,	YU,	ZA,	ZM,	ZW		
	RW:	BW,	GH,	GM,	KE,	LS,	MW,	MZ,	NA,	SD,	SL,	SZ,	TZ,	UG,	ZM,	ZW,	AM,		
		AZ,	BY,	KG,	KZ,	MD,	RU,	TJ,	TM,	AT,	BE,	BG,	CH,	CY,	CZ,	DE,	DK,		
		EE,	ES,	FI,	FR,	GB,	GR,	HU,	ΙE,	IS,	IT,	LU,	MC,	NL,	PL,	PT,	RO,		
		SE,	SI,	SK,	TR,	BF,	ВJ,	CF,	CG,	CI,	CM,	GA,	GN,	GQ,	GW,	ML,	MR,		
		ΝE,	SN,	TD,	TG														
U	US 20090105257					20090423			1	US 2	008-	5958	20081029						
PRIORI'	PRIORITY APPLN. INFO.:								1	US 2003-523532P					P 20031119				
									Ţ	WO 2004-US38126					W 20041115				
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ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT OTHER SOURCE(S): CASREACT 143:43685; MARPAT 143:43685 GI

$$ZYX^2X^1$$
  $CO_2A$   $R^1)_n$   $I$ 

Title compds. [I; n = 0-4; R1 = alkyl, alkoxy, halo, haloalkyl, NO2, cyano, NR7R8; R5, R7, R8 = H, alkyl; A = OH, NR2R3; R2, R3 = H, (Q1)qR4; q = 0-2; Q1 = alkylene; R4 = alkyl, haloalkyl, aryl, heteroaryl, cycloalkyl, heterocyclyl, OH, alkoxy, aryloxy; X1 = NH; X2 = C(R5)2; Y = aryl, heteroaryl; Z = (Q2)mR6; m = 0, 1; Q2 = NR5, O, S, O(CH2)p, CH2; p = 1-3; R6 = aryl, heteroaryl], were prepared Thus, trans-2-(4-aminophenyl)cyclopropanecarboxylic acid (preparation given) was refluxed with 3-phenoxybenzaldehyde in dichloroethane.

The mixture was cooled to room temperature and treated with NaB(OAc)3H followed by stirring for 1 h to give 16% trans-2-[4-[[3-(phenoxy)phenyl]methyl]amino]cyclopropanecarboxylic acid trifluoroacetate. The latter showed pEC50 = 7.9 in a GPR40 SAR primary assay. 853403-42-6P RL: PAC (Pharmacological activity); RCT (Reactant); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses) (claimed compound; preparation of aminophenylcyclopropylcarboxylates as GPR40 agonists) 853403-42-6 CAPLUS Cyclopropanecarboxylic acid, 2-[4-[[[3-(4-

nitrophenoxy)phenyl]methyl]amino]phenyl]-, (1R,2R)-rel- (CA INDEX NAME)

Relative stereochemistry.

ΙT

RN

RN 853403-22-2 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[([1,1'-biphenyl]-4-ylmethyl)amino]phenyl]-, (1R,2R)-rel- (CA INDEX NAME)

Relative stereochemistry.

RN 853403-23-3 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[[4-(2-pyridinyl)phenyl]methyl]amino]phenyl]-, (1R,2R)-rel- (CA INDEX NAME)

Relative stereochemistry.

RN 853403-24-4 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[[3-(3,4-dichlorophenoxy)phenyl]methyl]amino]phenyl]-, (1R,2R)-rel- (CA INDEX NAME)

Relative stereochemistry.

RN

CN Cyclopropanecarboxylic acid, 2-[4-[[[3-(4-methoxyphenoxy)phenyl]methyl]amino]phenyl]-, (1R,2R)-rel- (CA INDEX NAME)

Relative stereochemistry.

RN 853403-26-6 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[[3-(4-chlorophenoxy)phenyl]methyl]amino]phenyl]-, (1R,2R)-rel- (CA INDEX NAME)

Relative stereochemistry.

RN 853403-27-7 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[[3-[4-(1,1-dimethylethyl)phenoxy]phenyl]methyl]amino]phenyl]-, (1R,2R)-rel- (CA INDEX NAME)

Relative stereochemistry.

RN 853403-28-8 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[[3-(3,5-dichlorophenoxy)phenyl]methyl]amino]phenyl]-, (1R,2R)-rel- (CA INDEX NAME)

RN 853403-29-9 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[[3-[3-(trifluoromethy1)phenoxy]pheny1]methy1]amino]pheny1]-, (1R,2R)-rel- (CA INDEX NAME)

Relative stereochemistry.

RN 853403-30-2 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[[3-(4-methylphenoxy)phenyl]methyl]amino]phenyl]-, (1R,2R)-rel- (CA INDEX NAME)

Relative stereochemistry.

RN 853403-31-3 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[[3-(phenylmethoxy)phenyl]methyl]amino]phenyl]-, (1R,2R)-rel- (CA INDEX NAME)

RN 853403-32-4 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[(4-methyl-2-phenoxy-5-thiazolyl)methyl]amino]phenyl]-, (1R,2R)-rel- (CA INDEX NAME)

Relative stereochemistry.

RN 853403-33-5 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[[4-methyl-2-[4-(trifluoromethyl)phenyl]-5-thiazolyl]methyl]amino]phenyl]-, (1R,2R)-rel-(CA INDEX NAME)

Relative stereochemistry.

RN 853403-34-6 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[[4-(1-methylethyl)-2-[4-(trifluoromethyl)phenyl]-5-thiazolyl]methyl]amino]phenyl]-, (1R,2R)-rel-(CA INDEX NAME)

RN 853403-35-7 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[[5-(4-chlorophenyl)-2-furanyl]methyl]amino]phenyl]-, (1R,2R)-rel- (CA INDEX NAME)

Relative stereochemistry.

RN 853403-36-8 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[[4-(phenylmethoxy)phenyl]methyl]amino]phenyl]-, (1R,2R)-rel- (CA INDEX NAME)

Relative stereochemistry.

RN 853403-37-9 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[[2-(3,4-difluorophenoxy)-4-methyl-5-thiazolyl]methyl]amino]phenyl]-, (1R,2R)-rel- (CA INDEX NAME)

RN 853403-38-0 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[[5-[4-(trifluoromethyl)phenyl]-2-furanyl]methyl]amino]phenyl]-, (1R,2R)-rel- (CA INDEX NAME)

Relative stereochemistry.

RN 853403-39-1 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[[5-[4-(trifluoromethyl)phenyl]-2-thienyl]methyl]amino]phenyl]-, (1R,2R)-rel- (CA INDEX NAME)

Relative stereochemistry.

RN 853403-40-4 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[[4-[4-(trifluoromethyl)phenyl]-2-furanyl]methyl]amino]phenyl]-, (1R,2R)-rel- (CA INDEX NAME)

RN 853403-41-5 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[[3- (phenylmethyl)phenyl]methyl]amino]phenyl]-, (1R,2R)-rel- (CA INDEX NAME)

Relative stereochemistry.

RN 853403-43-7 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[[3-(phenylthio)phenyl]methyl]amino]phenyl]-, (1R,2R)-rel- (CA INDEX NAME)

Relative stereochemistry.

RN 853403-44-8 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[[3-(4-aminophenoxy)phenyl]methyl]amino]phenyl]-, (1R,2R)-rel- (CA INDEX NAME)

RN 853403-45-9 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[(3-phenoxyphenyl)methyl]amino]phenyl]-, (1R,2R)- (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).

RN 853403-46-0 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[(3-phenoxyphenyl)methyl]amino]phenyl]-, (1S,2S)- (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

RN 853403-47-1 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[[4-methyl-2-[4-(trifluoromethyl)phenyl]-5-thiazolyl]methyl]amino]phenyl]-, (1S,2S)- (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

RN 853403-48-2 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[[3-(3,4-dichlorophenoxy)phenyl]methyl]amino]phenyl]-, ethyl ester, (1S,2S)- (CA INDEX NAME)

Absolute stereochemistry.

RN 853403-49-3 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[[3-(3,4-dichlorophenoxy)phenyl]methyl]amino]phenyl]-, (1S,2S)- (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

RN 853403-50-6 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[[4-methyl-2-[4-(trifluoromethyl)phenyl]-5-thiazolyl]methyl]amino]phenyl]-, (1R,2S)-rel-(-)- (CA INDEX NAME)

Rotation (-). Absolute stereochemistry unknown.

RN 853403-51-7 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[2-chloro-4-[[(3-phenoxyphenyl)methyl]amino]phenyl]-, ethyl ester, (1R,2R)-rel- (CA INDEX NAME)

Relative stereochemistry.

RN 853403-52-8 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[2-chloro-4-[[(3-phenoxyphenyl)methyl]amino]phenyl]-, (1R,2R)-rel-(+)- (CA INDEX NAME)

Rotation (+). Absolute stereochemistry unknown.

RN 853403-53-9 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[2,5-difluoro-4-[[(3-phenoxyphenyl)methyl]amino]phenyl]-, ethyl ester, (1R,2R)-rel- (CA INDEX NAME)

RN 853403-54-0 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[2,5-difluoro-4-[[(3-phenoxyphenyl)methyl]amino]phenyl]-, (1R,2R)-rel-(+)- (CA INDEX NAME)

Rotation (+). Absolute stereochemistry unknown.

RN 853403-55-1 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[[3-(3,5-dichlorophenoxy)phenyl]methyl]amino]phenyl]-, (1S,2S)- (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

RN 853403-56-2 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[[3-[3-(trifluoromethyl)phenoxy]phenyl]methyl]amino]phenyl]-, (1S,2S)- (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

RN 853403-57-3 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[[3-(4-methylphenoxy)phenyl]methyl]amino]phenyl]-, (1S,2S)- (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(preparation of aminophenylcyclopropylcarboxylates as GPR40 agonists) RN 853403-77-7 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[(3-phenoxyphenyl)methyl]amino]phenyl]-, (1R, 2R)-rel-, 2, 2, 2-trifluoroacetate (1:1) (CA INDEX NAME)

CM 1

CRN 853403-21-1 CMF C23 H21 N O3

Relative stereochemistry.

CM 2

CRN 76-05-1 CMF C2 H F3 O2

RN 853403-78-8 CAPLUS
CN Cyclopropanecarboxylic acid, 2-[4-[[[3-(3,4-dichlorophenoxy)phenyl]methyl]amino]phenyl]-, (1R,2R)-rel-, 2,2,2-trifluoroacetate (1:1) (CA INDEX NAME)

CM 1

CRN 853403-24-4
CMF C23 H19 C12 N O3

Relative stereochemistry.

CM 2

CRN 76-05-1

CMF C2 H F3 O2

RN 853403-79-9 CAPLUS
CN Cyclopropanecarboxylic acid, 2-[4-[[[3-(4-methoxyphenoxy)phenyl]methyl]amino]phenyl]-, (1R,2R)-rel-, 2,2,2-trifluoroacetate (1:1) (CA INDEX NAME)

CM 1

CRN 853403-25-5
CMF C24 H23 N O4

CM 2

CRN 76-05-1 CMF C2 H F3 O2

CRN 853403-26-6 CMF C23 H20 C1 N O3

Relative stereochemistry.

CM 2

CRN 76-05-1 CMF C2 H F3 O2

RN 853403-81-3 CAPLUS
CN Cyclopropanecarboxylic acid, 2-[4-[[[3-[4-(1,1-dimethylethyl)phenoxy]phenyl]methyl]amino]phenyl]-, (1R,2R)-rel-, 2,2,2-trifluoroacetate (1:1) (CA INDEX NAME)

CM 1

CRN 853403-27-7

CMF C27 H29 N O3

Relative stereochemistry.

CM 2

CRN 76-05-1 CMF C2 H F3 O2

RN 853403-82-4 CAPLUS
CN Cyclopropanecarboxylic acid, 2-[4-[[[3-(3,5-dichlorophenoxy)phenyl]methyl]amino]phenyl]-, (1R,2R)-rel-, 2,2,2-trifluoroacetate (1:1) (CA INDEX NAME)

CM 1

CRN 853403-28-8
CMF C23 H19 C12 N O3

CM 2

CRN 76-05-1 CMF C2 H F3 O2

RN 853403-83-5 CAPLUS
CN Cyclopropanecarboxylic acid, 2-[4-[[[3-[3-(trifluoromethyl)phenoxy]phenyl]methyl]amino]phenyl]-, (1R,2R)-rel-, 2,2,2-trifluoroacetate (1:1) (CA INDEX NAME)

CM 1

CRN 853403-29-9
CMF C24 H20 F3 N O3

Relative stereochemistry.

CM 2

CRN 76-05-1 CMF C2 H F3 O2

RN 853403-84-6 CAPLUS
CN Cyclopropanecarboxylic acid, 2-[4-[[[3-(4-methylphenoxy)phenyl]methyl]amino]phenyl]-, (1R,2R)-rel-, 2,2,2-trifluoroacetate (1:1) (CA INDEX NAME)

CM 1

CRN 853403-30-2
CMF C24 H23 N O3

Relative stereochemistry.

CM 2
CRN 76-05-1

CRN 76-05-1 CMF C2 H F3 O2

RN 853403-85-7 CAPLUS
CN Cyclopropanecarboxylic acid, 2-[4-[[[3(phenylmethoxy)phenyl]methyl]amino]phenyl]-, (1R,2R)-rel-,
2,2,2-trifluoroacetate (1:1) (CA INDEX NAME)

CM 1

CRN 853403-31-3
CMF C24 H23 N O3

CM 2

CRN 76-05-1 CMF C2 H F3 O2

RN 853403-86-8 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[(4-methyl-2-phenoxy-5-thiazolyl)methyl]amino]phenyl]-, (1R,2R)-rel-, 2,2,2-trifluoroacetate (1:1) (CA INDEX NAME)

CM 1

CRN 853403-32-4 CMF C21 H20 N2 O3 S

Relative stereochemistry.

CM 2

CRN 76-05-1 CMF C2 H F3 O2

RN 853403-87-9 CAPLUS
CN Cyclopropanecarboxylic acid, 2-[4-[[4(phenylmethoxy)phenyl]methyl]amino]phenyl]-, (1R,2R)-rel-,
2,2,2-trifluoroacetate (1:1) (CA INDEX NAME)

CM 1

CRN 853403-36-8
CMF C24 H23 N O3

Relative stereochemistry.

CM 2

CRN 76-05-1

CMF C2 H F3 O2

RN 853403-88-0 CAPLUS
CN Cyclopropanecarboxylic acid, 2-[4-[[[5-[4-(trifluoromethyl)phenyl]-2-furanyl]methyl]amino]phenyl]-, (1R,2R)-rel-, 2,2,2-trifluoroacetate (1:1) (CA INDEX NAME)

CM 1

CRN 853403-38-0

CMF C22 H18 F3 N O3

CM 2

CRN 76-05-1 CMF C2 H F3 O2

RN 853403-89-1 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[[5-[4-(trifluoromethyl)phenyl]-2-thienyl]methyl]amino]phenyl]-, (1R,2R)-rel-, 2,2,2-trifluoroacetate (1:1) (CA INDEX NAME)

CM 1

CRN 853403-39-1

CMF C22 H18 F3 N O2 S

Relative stereochemistry.

CM 2

CRN 76-05-1 CMF C2 H F3 O2

RN 853403-90-4 CAPLUS
CN Cyclopropanecarboxylic acid, 2-[4-[[[3(phenylmethyl)phenyl]methyl]amino]phenyl]-, (1R,2R)-rel-,
2,2,2-trifluoroacetate (1:1) (CA INDEX NAME)

CM 1

CRN 853403-41-5
CMF C24 H23 N O2

Relative stereochemistry.

CM 2

CRN 76-05-1 CMF C2 H F3 O2

RN 853403-91-5 CAPLUS
CN Cyclopropanecarboxylic acid, 2-[4-[[[3-(4-nitrophenoxy)phenyl]methyl]amino]phenyl]-, (1R,2R)-rel-, 2,2,2-trifluoroacetate (1:1) (CA INDEX NAME)

CM 1

CRN 853403-42-6
CMF C23 H20 N2 O5

CM 2

CRN 76-05-1 CMF C2 H F3 O2

CRN 853403-43-7 CMF C23 H21 N O2 S

Relative stereochemistry.

CM 2

CRN 76-05-1 CMF C2 H F3 O2

RN 853403-93-7 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[[3-(4-aminophenoxy)phenyl]methyl]amino]phenyl]-, (1R,2R)-rel-, 2,2,2-trifluoroacetate (1:1) (CA INDEX NAME)

CM 1

CRN 853403-44-8 CMF C23 H22 N2 O3

Relative stereochemistry.

CM 2

CRN 76-05-1 CMF C2 H F3 O2

RN 853403-94-8 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[[3-(3,4-dichlorophenoxy)phenyl]methyl]amino]phenyl]-, (1S,2S)-, 2,2-trifluoroacetate (1:1) (CA INDEX NAME)

CM 1

CRN 853403-49-3 CMF C23 H19 C12 N O3

Absolute stereochemistry. Rotation (+).

CM 2

CRN 76-05-1 CMF C2 H F3 O2

RN 853403-95-9 CAPLUS
CN Cyclopropanecarboxylic acid, 2-[4-[[[3-(3,5-dichlorophenoxy)phenyl]methyl]amino]phenyl]-, (1S,2S)-,
2,2,2-trifluoroacetate (1:1) (CA INDEX NAME)
CM 1

CRN 853403-55-1 CMF C23 H19 C12 N O3

Absolute stereochemistry. Rotation (+).

CM 2

CRN 76-05-1 CMF C2 H F3 O2

RN 853403-96-0 CAPLUS
CN Cyclopropanecarboxylic acid, 2-[4-[[[3-(4-methylphenoxy)phenyl]methyl]amino]phenyl]-, (1S,2S)-, 2,2,2-trifluoroacetate (1:1) (CA INDEX NAME)

CM 1

CRN 853403-57-3
CMF C24 H23 N O3

Absolute stereochemistry. Rotation (+).

CM 2

CRN 76-05-1

CMF C2 H F3 O2

RN 853404-07-6 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[(3-phenoxyphenyl)methyl]amino]phenyl]-, ethyl ester, (1S,2S)- (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).

RN 853404-08-7 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[[4-methyl-2-[4-(trifluoromethyl)phenyl]-5-thiazolyl]methyl]amino]phenyl]-, ethyl ester, (1R,2S)-rel- (CA INDEX NAME)

Relative stereochemistry.

RN 853404-09-8 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[[3-(3,5-dichlorophenoxy)phenyl]methyl]amino]phenyl]-, ethyl ester, (1R,2R)-rel-(CA INDEX NAME)

RN 853404-10-1 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[[3-[3-(trifluoromethyl)phenoxy]phenyl]methyl]amino]phenyl]-, ethyl ester, (1R,2R)-rel- (CA INDEX NAME)

Relative stereochemistry.

RN 853404-11-2 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[[3-(4-methylphenoxy)phenyl]methyl]amino]phenyl]-, ethyl ester, (1R,2R)-rel- (CA INDEX NAME)

Relative stereochemistry.

OS.CITING REF COUNT: 6 THERE ARE 6 CAPLUS RECORDS THAT CITE THIS RECORD

(7 CITINGS)

REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 12 OF 17 CAPLUS COPYRIGHT 2010 ACS on STN ACCESSION NUMBER: 2004:453231 CAPLUS  $\underline{\text{Full-text}}$ 

DOCUMENT NUMBER: 141:23422

TITLE: Preparation of non-steroidal FXR agonists

INVENTOR(S): Nicolaou, Kyriacos C.; Roecker, Anthony J.; Hughes,

Robert; Pfefferkorn, Jeffrey A.

PATENT ASSIGNEE(S): The Scripps Research Institute, USA

SOURCE: PCT Int. Appl., 75 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PAT	PATENT NO.						DATE		APPLICATION NO.									
WO	2004046162			A2 200406				WO 2003-US36195						20031114				
WO	2004046162			A3		20040812												
	W:	ΑE,	AG,	AL,	AM,	AT,	ΑU,	ΑZ,	BA,	BB,	BG,	BR,	BY,	BZ,	CA,	CH,	CN,	
		CO,	CR,	CU,	CZ,	DE,	DK,	DM,	DZ,	EC,	EE,	EG,	ES,	FI,	GB,	GD,	GE,	
		GH,	GM,	HR,	HU,	ID,	IL,	IN,	IS,	JΡ,	KE,	KG,	KP,	KR,	KΖ,	LC,	LK,	
		LR,	LS,	LT,	LU,	LV,	MA,	MD,	MG,	MK,	MN,	MW,	MX,	MZ,	NI,	NO,	NZ,	
		OM,	PG,	PH,	PL,	PT,	RO,	RU,	SC,	SD,	SE,	SG,	SK,	SL,	SY,	ΤJ,	TM,	
		TN,	TR,	TT,	TZ,	UA,	UG,	US,	UΖ,	VC,	VN,	YU,	ZA,	ZM,	ZW			
	RW:	GH,	GM,	KE,	LS,	MW,	MΖ,	SD,	SL,	SZ,	TZ,	UG,	ZM,	ZW,	AM,	AΖ,	BY,	
		KG,	KΖ,	MD,	RU,	ΤJ,	TM,	ΑT,	BE,	BG,	CH,	CY,	CZ,	DE,	DK,	EE,	ES,	
		FI,	FR,	GB,	GR,	HU,	IE,	IT,	LU,	MC,	NL,	PT,	RO,	SE,	SI,	SK,	TR,	
		BF,	ВJ,	CF,	CG,	CI,	CM,	GA,	GN,	GQ,	GW,	ML,	MR,	NE,	SN,	TD,	ΤG	
AU	2003	2907	96		A1		2004	0615		AU 2	003-	2907	96		2	0031	114	
PRIORITY	RIORITY APPLN. INFO.:								1	US 2002-426456P			56P	]	P 20021114			
											US 2003-491185P					P 20030729		
									1	WO 2	003-	US36:	195	1	W 2	0031	114	

OTHER SOURCE(S): MARPAT 141:23422

GΙ

AB Non-steroidal N-aryl-N-arylmethyl amido and ureido compds. such as I [E1 = (C1-C8)alkyl, cyclohexyl, 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, Ph, NH(C1-C8)alkyl; L1, L2 = H; dashed bond = single bond or double bond; X1 = CO, CH2; Y1 = H, NHZ1, NH(Z2)Z3, OZ4; A1 = aryl, heterocyclyl etc.; Z1 = H, Ph, alkyl, benzyl, benzoyl; Z2, Z3 = alkyl; Z2Z3 = cycloalkyl; Z4 = H, oxygen protecting groupl, were prepared for their therapeutic use as farnesoid X receptor (FXR) agonists. Thus, biaryl compound II, prepared via solid phase synthesis starting from N-(tert-butoxycarbonyl)-3-aminocinnamic acid, Merrifield Resin, 4-bromobenzaldehyde, cyclohexanoyl chloride, and 3,4-difluorobenzeneboronic acid, showed FXR activity (EC50 = 72 nM) and relative efficacy = 1.70 at 1-100 mM CDCA from a cell-based assay. The FXR agonists are useful as therapeutic agents for the treatment of diseases linked to cholesterol, bile acids, and their metabolism and homeostasis.

IT 698355-32-7P

RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES

(Uses)

(preparation of N-aryl-N-arylmethyl amido and ureido compds. as farnesoid X receptor agonists)

698355-32-7 CAPLUS RN

CN Cyclopropanecarboxylic acid, 2-[3-[(cyclopropylcarbonyl)](8-methoxy-2,2dimethyl-2H-1-benzopyran-7-yl)methyl]amino]phenyl]-, methyl ester (CA INDEX NAME)

THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD OS.CITING REF COUNT: (1 CITINGS)

ANSWER 13 OF 17 CAPLUS COPYRIGHT 2010 ACS on STN ACCESSION NUMBER: 2004:453152 CAPLUS Full-text

DOCUMENT NUMBER: 141:17647

TITLE: N-acyl-N-arylmethylaniline acrylates as nonsteroidal

farnesoid X receptor modulators

INVENTOR(S): Downes, Michael R.; Evans, Ronald M.

The Salk Institute for Biological Studies, USA PATENT ASSIGNEE(S):

SOURCE: PCT Int. Appl., 98 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent LANGUAGE: English

FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

I	PATENT NO.									•	APPL	ICAT	ION 1	NO.						
										WO 2003-US36137						20031114				
,	WO	0 2004046068 W: AE, AG, AL,						BA.	BB.	BG.	BR.	BW.	BY.	B7.	CA.	CH.				
								DE,												
						•		ID,		•			•							
			LK,	LR,	LS,	LT,	LU,	LV,	MA,	MD,	MG,	MK,	MN,	MW,	MX,	MZ,	NI,	NO,		
			NZ,	OM,	PG,	PH,	PL,	PT,	RO,	RU,	SC,	SD,	SE,	SG,	SK,	SL,	SY,	ТJ,		
			$\mathrm{TM}$ ,	TN,	TR,	TT,	TZ,	UA,	UG,	US,	UZ,	VC,	VN,	YU,	ZA,	ZM,	ZW			
		RW:	BW,	GH,	GM,	KE,	LS,	MW,	${ m MZ}$ ,	SD,	SL,	SZ,	TZ,	UG,	ZM,	ZW,	AM,	ΑZ,		
			BY,	KG,	KΖ,	$\mathtt{MD}$ ,	RU,	ТJ,	TM,	ΑT,	BE,	BG,	CH,	CY,	CZ,	DE,	DK,	EE,		
			ES,	FΙ,	FR,	GB,	GR,	HU,	IE,	ΙT,	LU,	MC,	NL,	PT,	RO,	SE,	SI,	SK,		
			TR,	BF,	ВJ,	CF,	CG,	CI,	CM,	GΑ,	GN,	GQ,	GW,	ML,	MR,	NE,	SN,	TD,	ΤG	
Ţ	US	2005	0143	449		A1		2005	0630		US 2	003-	6581	15	20030908					
Ž	AU	2003	2942	64		A1		2004	0615		AU 2	003-	2942	64		2	0031	114		
Ţ	US	2006	0128	764		A1		2006	0615		US 2	005-	5350	43		2	0051	209		
PRIOR	RIORITY APPLN. INFO.:								US 2	002-	4266	64P		P 2	0021	115				
											US 2	003-	6581	15		A2 2	0030	908		
											WO 2	003-	US36	137	,	W 2	0031	114		
OTHER	THER SOURCE(S):					MAR	PAT	141:	1764	7										

OTHER SOURCE(S): MARPAT 141:17647

GΙ

$$R^2$$
 $R^3$ 
 $R^4$ 
 $R^5$ 
 $R^5$ 

AB A method for modulating process(es) mediated by farnesyl X receptor polypeptides comprises conducting said process(es) in the presence of title compds. [I; A = (substituted) alkyl, cycloalkyl, aryl, heteroaryl; X = CO, CH2; R = Me, Et; R1 = H, OH, alkoxy, PhCO2, mesityloxy, OCH2CO2Et; R2 = H; R3 = alkenyl, (substituted) aryl, heteroaryl, aralkenyl, heteroaralkenyl; R2R3 = atoms to form a (substituted) (unsatd.) pyran ring; R4 = H, OH; R5 = H, OH, alkoxy, aryloxy]. In a cell-based transcription assay, title compound (II) activated FXR with EC50 = 36 nM.

IT 698355-32-7P

RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(preparation of N-acyl-N-arylmethylaniline acrylates as nonsteroidal farnesoid X receptor modulators)

RN 698355-32-7 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[3-[(cyclopropylcarbonyl)](8-methoxy-2,2-dimethyl-2H-1-benzopyran-7-yl)methyl]amino]phenyl]-, methyl ester (CA INDEX NAME)

REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 14 OF 17 CAPLUS COPYRIGHT 2010 ACS on STN ACCESSION NUMBER: 2004:452954 CAPLUS Full-text DOCUMENT NUMBER: 141:17646

TITLE: N-acyl-N-benzylaniline acrylates as nonsteroidal

farnesoid X receptor (FXR) modulators

INVENTOR(S): Downes, Michael R.; Evans, Ronald Mark; Hughes,

Robert; Nicolaou, Kyriacos C.; Roecker, Anthony J. The Salk Institute for Biological Studies, USA; The

PATENT ASSIGNEE(S): The Salk Institute for Biol Scripps Research Institute

SOURCE: PCT Int. Appl., 62 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent LANGUAGE: English

FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

	PATENT NO.										APPLICATION NO.							
WO	2004045511			A2 20040603														
WO	2004045511			A3		2004	0708											
	W:	ΑE,	AG,	AL,	ΑM,	ΑT,	ΑU,	ΑZ,	ΒA,	BB,	ВG,	BR,	B₩,	BY,	ΒZ,	CA,	CH,	
		CN,	CO,	CR,	CU,	CZ,	DE,	DK,	DM,	DΖ,	EC,	EE,	EG,	ES,	FI,	GB,	GD,	
		GE,	GH,	GM,	HR,	HU,	ID,	IL,	IN,	IS,	JP,	ΚE,	KG,	KP,	KR,	KΖ,	LC,	
		LK,	LR,	LS,	LT,	LU,	LV,	MA,	MD,	MG,	MK,	MN,	MW,	MX,	MZ,	NI,	NO,	
		ΝZ,	OM,	PG,	PH,	PL,	PT,	RO,	RU,	SC,	SD,	SE,	SG,	SK,	SL,	SY,	ΤJ,	
		TM,	TN,	TR,	TT,	ΤZ,	UA,	UG,	US,	UΖ,	VC,	VN,	YU,	ZA,	ZM,	ZW		
	RW:	BW,	GH,	GM,	ΚE,	LS,	MW,	MΖ,	SD,	SL,	SZ,	TZ,	UG,	ZM,	ZW,	AM,	ΑZ,	
		BY,	KG,	KΖ,	MD,	RU,	ТJ,	TM,	AT,	BE,	ВG,	CH,	CY,	CZ,	DE,	DK,	EE,	
		ES,	FI,	FR,	GB,	GR,	HU,	ΙE,	ΙΤ,	LU,	MC,	NL,	PT,	RO,	SE,	SI,	SK,	
		TR,	BF,	ВJ,	CF,	CG,	CI,	CM,	GΑ,	GN,	GQ,	GW,	ML,	MR,	ΝE,	SN,	TD,	ΤG
US	2005	0143	449		A1		2005	0630		US 2003-658115								
AU	2003	2907	78		A1		2004	0615		AU 2	003-	2907	78	20031114				
US	2006	0223	879		A1		2006	1005		US 2	005-	5350	41		2	0051	228	
PRIORIT	IORITY APPLN. INFO.:									US 2002-426664P				P 20021115				
										US 2003-658115				A2 20030908				
										WO 2	003-	US36	123	,	W 2	0031	114	
									_									

OTHER SOURCE(S): MARPAT 141:17646

GΙ

$$R^2$$
 $R^3$ 
 $R^4$ 
 $R^5$ 
 $R^5$ 

Title compds. [I; A = (substituted) alkyl, cycloalkyl, aryl, heteroaryl; X = CO, CH2; R = Me, Et; R1 = H, OH, alkoxy, PhCO2, mesityloxy, OCH2CO2Et; R2 = H; R3 = alkenyl, (substituted) aryl, heteroaryl, aralkenyl, heteroaralkenyl; R2R3 = atoms to form a substituted (unsatd.) pyran ring; R4 = H, OH; R5 = H, OH, alkoxy, aryloxy], are claimed. Thus, benzopyran derivative (II) activated FXR receptors with EC50 = 358 nM.

IT 698355-32-7P

RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(preparation of acylbenzylaniline acrylates as nonsteroidal farnesoid X receptor (FXR) modulators)

RN 698355-32-7 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[3-[(cyclopropylcarbonyl)][(8-methoxy-2,2-dimethyl-2H-1-benzopyran-7-yl)methyl]amino]phenyl]-, methyl ester (CA INDEX NAME)

OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD

(1 CITINGS)

REFERENCE COUNT: 1 THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS

RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 15 OF 17 CAPLUS COPYRIGHT 2010 ACS on STN ACCESSION NUMBER: 2004:189159 CAPLUS  $\underline{\text{Full-text}}$ 

DOCUMENT NUMBER: 140:417238

TITLE: Synthesis of cinnamic acids and related isosteres as

potent and selective  $\alpha v \beta 3$  receptor

antagonists

AUTHOR(S): Penning, Thomas D.; Russell, Mark A.; Chen, Barbara

B.; Chen, Helen Y.; Desai, Bipin N.; Docter, Stephen

H.; Edwards, David J.; Gesicki, Glen J.; Liang,

Chi-Dean; Malecha, James W.; Yu, Stella S.; Engleman, V. Wayne; Freeman, Sandra K.; Hanneke, Melanie L.; Shannon, Kristen E.; Westlin, Marisa M.; Nickols, G.

Allen

CORPORATE SOURCE: Department of Medicinal Chemistry, Pfizer Global

Research & Development, Skokie, IL, 60077, USA

SOURCE: Bioorganic & Medicinal Chemistry Letters (2004),

14(6), 1471-1476

CODEN: BMCLE8; ISSN: 0960-894X

PUBLISHER: Elsevier Science B.V.

DOCUMENT TYPE: Journal LANGUAGE: English

We describe a series of conformationally-restricted cinnamic acid peptidomimetics as well as several cinnamic acid isosteres, including 3-phenylpropionic acids, 2-amino-3-phenylpropionic acids, phenoxyacetic acids and 2-phenylcyclopropylcarboxylic acids. Several analogs demonstrated low to sub-nanomolar potencies against  $\alpha v\beta 3$  and greater than 200-fold selectivity against the other  $\beta 3$  integrin  $\alpha IIb\beta 3$ . In whole 293 cells, many of these analogs also showed modest selectivity against other  $\alpha v$  integrins such as  $\alpha v\beta 1$  and  $\alpha v\beta 5$ . These compds. were synthesized from readily available starting materials using either Heck or Mitsunobu coupling conditions.

IT 198149-23-4 198149-33-6

RL: PAC (Pharmacological activity); BIOL (Biological study)

(synthesis of cinnamic acids and related isosteres as potent and selective  $\alpha \nu \beta 3$  receptor antagonists)

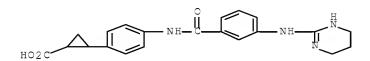
RN 198149-23-4 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[3-

[(aminoiminomethyl)amino]benzoyl]amino]phenyl]- (CA INDEX NAME)

RN 198149-33-6 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[3-[(1,4,5,6-tetrahydro-2-pyrimidinyl)amino]benzoyl]amino]phenyl]- (CA INDEX NAME)



OS.CITING REF COUNT: 9 THERE ARE 9 CAPLUS RECORDS THAT CITE THIS RECORD

(9 CITINGS)

REFERENCE COUNT: 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS

RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 16 OF 17 CAPLUS COPYRIGHT 2010 ACS on STN ACCESSION NUMBER: 1998:430105 CAPLUS Full-text

DOCUMENT NUMBER: 129:95328

ORIGINAL REFERENCE NO.: 129:19663a,19666a

TITLE: Preparation of phenyl-substituted cyclopropanealkanoic

acids as  $\alpha v \beta 3$  integrin antagonists or

inhibitors

INVENTOR(S): Chen, Barbara B.; Chen, Helen Y.; Clare, Michael; Rao,

Shashidhar N.; Russell, Mark A.

PATENT ASSIGNEE(S): G.D. Searle and Co., USA

SOURCE: U.S., 29 pp.

CODEN: USXXAM

DOCUMENT TYPE: Patent LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5773 <b>6</b> 44	A	19980630	US 1997-825040	19970327
PRIORITY APPLN. INFO.:			US 1997-825040	19970327

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

OTHER SOURCE(S): MARPAT 129:95328

GΙ

Title compds. I [wherein Y1 = NR2, O, S; R2 = H, alkyl, aryl, etc.; R7, R8 = AΒ H, alkyl, alkenyl, etc.; R5 = H, alkyl, alkenyl, etc., NR5C(:NR7)Y2 (Y2 = alkyl, cycloalkyl, bicycloalkyl); Z1, Z2, Z4, Z5 = H, alkyl, OH, etc.; B = CH2CONH, C(0)0, SO2NH, etc.; 1 = 0-3; t = 0-2; R50 = H, alkyl, aryl; R = XR3(wherein X = O, S, NR4; R3, R4 = H, alkyl, alkenyl); Y3, Z3 = H, alkyl, aryl, etc.; R1 = NHC(0)R12, NHC(0)OR12; NHSO2R12, etc. (wherein R12 = H, alkyl, cycloalkyl, etc.)] and their pharmaceutically acceptable salts are disclosed. The compds. are selective inhibitors or antagonists of  $\alpha v \beta 3$  integrin, and are thus useful for treating tumor metastasis, solid tumor growth, angiogenesis, osteoporosis, humoral hypercalcemia of malignancy, smooth muscle cell migration, and restenosis. Thus, 3-guanidinobenzoic acid. HCl was coupled with Et 2-(4-aminophenyl)cyclopropanecarboxylate using 1-methylpiperidine and iso-Bu chloroformate, and the ester product was partially hydrolyzed using LiOH in MeOH, to give after workup title compound II.CF3COOH. In solid-phase receptor assays, the latter showed an IC50 value of 30.5 nM against  $\alpha v\beta 3$  integrin, but a less potent IC50 of 533 nM against IIb/IIIa receptors (indicator of undesired hematol. side effects).

IT 1099438-87-5 1099438-88-6 1099438-89-7 1099438-90-0

RL: PRPH (Prophetic)

(Preparation of phenyl-substituted cyclopropanealkanoic acids as  $\alpha\nu\beta3$  integrin antagonists or inhibitors)

RN 1099438-87-5 CAPLUS

CN INDEX NAME NOT YET ASSIGNED

Relative stereochemistry.

RN 1099438-88-6 CAPLUS
CN INDEX NAME NOT YET ASSIGNED

Relative stereochemistry.

Double bond geometry as shown.

RN 1099438-89-7 CAPLUS
CN INDEX NAME NOT YET ASSIGNED

Relative stereochemistry.

RN 1099438-90-0 CAPLUS CN INDEX NAME NOT YET ASSIGNED

Relative stereochemistry.

Double bond geometry as shown.

IT 198149-22-3P

RL: ADV (Adverse effect, including toxicity); BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); RCT (Reactant); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)

(preparation of phenyl-substituted cyclopropanealkanoic acids as  $\alpha v \beta 3$  integrin antagonists or inhibitors)

RN 198149-22-3 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[3[(aminoiminomethyl)amino]benzoyl]amino]phenyl]-, ethyl ester,
2,2,2-trifluoroacetate (2:3) (CA INDEX NAME)

CM 1

CRN 198149-21-2 CMF C20 H22 N4 O3

$$\mathsf{EtO} = \mathsf{C} \qquad \mathsf{NH} = \mathsf{U} \qquad \mathsf{N$$

CM 2

CRN 76-05-1 CMF C2 H F3 O2

IT 198149-21-2P 198149-23-4P 198149-24-5P 198149-27-8P 198149-28-9P 198149-29-0P 198149-30-3P 198149-31-4P 198149-32-5P 198149-33-6P 198149-34-7P 198149-35-8P 198149-36-9P 198149-37-0P 198149-38-1P

RL: ADV (Adverse effect, including toxicity); BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(preparation of phenyl-substituted cyclopropanealkanoic acids as  $\alpha v \beta 3$  integrin antagonists or inhibitors)

RN 198149-21-2 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[3[(aminoiminomethyl)amino]benzoyl]amino]phenyl]-, ethyl ester (CA INDEX NAME)

$$\text{EtO-C} \qquad \text{NH-C-NH}_2$$

RN 198149-23-4 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[3-[(aminoiminomethyl)amino]benzoyl]amino]phenyl]- (CA INDEX NAME)

RN 198149-24-5 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[3-

[(aminoiminomethyl)amino]benzoyl]amino]phenyl]-, 2,2,2-trifluoroacetate (1:1) (CA INDEX NAME)

CM 1

CRN 198149-23-4 CMF C18 H18 N4 O3

CM 2

CRN 76-05-1 CMF C2 H F3 O2

RN 198149-27-8 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[3-[(aminoiminomethyl)amino]benzoyl]amino]-2-methoxyphenyl]-, ethyl ester (CA INDEX NAME)

$$\begin{array}{c} \text{MeO} \\ \text{NH} \\ \text{C} \\ \text{NH} \\ \text{C} \\ \text{NH} \\$$

CN Cyclopropanecarboxylic acid, 2-[4-[[3[(aminoiminomethyl)amino]benzoyl]amino]-2-methoxyphenyl]-, ethyl ester,
2,2,2-trifluoroacetate (1:1) (CA INDEX NAME)

CM 1

CRN 198149-27-8 CMF C21 H24 N4 O4

CM 2

CRN 76-05-1 CMF C2 H F3 O2

RN 198149-29-0 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[3-[(aminoiminomethyl)amino]benzoyl]amino]-2-methoxyphenyl]- (CA INDEX NAME)

RN 198149-30-3 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[3-[(aminoiminomethyl)amino]benzoyl]amino]-2-methoxyphenyl]-, 2,2,2-trifluoroacetate (2:3) (CA INDEX NAME)

CM 1

CRN 198149-29-0 CMF C19 H20 N4 O4

$$\begin{array}{c} \text{MeO} \\ \text{NH} \\ \text{C} \\ \text{NH} \\ \text{C} \\ \text{NH} \\$$

CM 2

CRN 76-05-1 CMF C2 H F3 O2

RN 198149-31-4 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[3-[(aminoiminomethyl)amino]-5-(trifluoromethyl)benzoyl]amino]phenyl]- (CA INDEX NAME)

RN 198149-32-5 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[3-[(aminoiminomethyl)amino]-5-(trifluoromethyl)benzoyl]amino]phenyl]-, 2,2,2-trifluoroacetate (10:13) (CA INDEX NAME)

CM 1

CRN 198149-31-4 CMF C19 H17 F3 N4 O3

CM 2

CRN 76-05-1 CMF C2 H F3 O2

RN 198149-33-6 CAPLUS

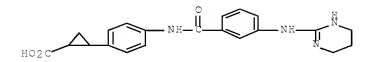
CN Cyclopropanecarboxylic acid, 2-[4-[[3-[(1,4,5,6-tetrahydro-2-pyrimidinyl)amino]benzoyl]amino]phenyl]- (CA INDEX NAME)

RN 198149-34-7 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[3-[(1,4,5,6-tetrahydro-2-pyrimidinyl)amino]benzoyl]amino]phenyl]-, 2,2,2-trifluoroacetate (10:11) (CA INDEX NAME)

CM 1

CRN 198149-33-6 CMF C21 H22 N4 O3



CM 2

CRN 76-05-1 CMF C2 H F3 O2

RN 198149-35-8 CAPLUS

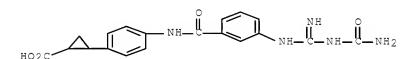
CN Cyclopropanecarboxylic acid, 2-[4-[[3-[[(aminocarbonyl)amino]iminomethyl]amino]benzoyl]amino]phenyl]- (CA INDEX NAME)

RN 198149-36-9 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[3-[[[(aminocarbonyl)amino]iminomethyl]amino]benzoyl]amino]phenyl]-, 2,2,2-trifluoroacetate (5:6) (CA INDEX NAME)

CM 1

CRN 198149-35-8 CMF C19 H19 N5 O4



CM 2

CRN 76-05-1 CMF C2 H F3 O2

RN 198149-37-0 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[3-[(aminoiminomethyl)amino]benzoyl]amino]-3-fluorophenyl]- (CA INDEX NAME)

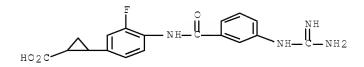
$$\begin{array}{c} \text{NH} \\ \text{NH} \\$$

RN 198149-38-1 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[3-[(aminoiminomethyl)amino]benzoyl]amino]-3-fluorophenyl]-, 2,2,2-trifluoroacetate (1:1) (CA INDEX NAME)

CM 1

CRN 198149-37-0 CMF C18 H17 F N4 O3



CM 2

CRN 76-05-1 CMF C2 H F3 O2

IT 198149-41-6P 198149-42-7P 198149-47-2P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(preparation of phenyl-substituted cyclopropanealkanoic acids as  $\alpha v\beta 3$  integrin antagonists or inhibitors)

RN 198149-41-6 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[3-

[[(cyanoamino)iminomethyl]amino]benzoyl]amino]phenyl]-, ethyl ester (CA INDEX NAME)

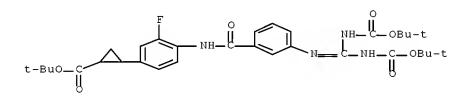
RN 198149-42-7 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[3-[[(aminocarbonyl)amino]iminomethyl]amino]benzoyl]amino]phenyl]-, ethyl ester (CA INDEX NAME)

$$\begin{array}{c|c} & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\$$

RN 198149-47-2 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[3-[[bis[[(1,1-dimethylethoxy)carbonyl]amino]methylene]amino]benzoyl]amino]-3-fluorophenyl]-, 1,1-dimethylethyl ester (CA INDEX NAME)



OS.CITING REF COUNT: 4 THERE ARE 4 CAPLUS RECORDS THAT CITE THIS RECORD

(4 CITINGS)

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS

RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 17 OF 17 CAPLUS COPYRIGHT 2010 ACS on STN ACCESSION NUMBER: 1997:679048 CAPLUS Full-text

DOCUMENT NUMBER: 127:346201

ORIGINAL REFERENCE NO.: 127:67927a,67930a

TITLE: Preparation of phenyl-substituted cyclopropanealkanoic

acids as  $\alpha v \beta 3$  integrin antagonists or

inhibitors

INVENTOR(S): Chen, Barbara B.; Chen, Helen Y.; Clare, Michael; Rao,

Shashidhar N.; Russell, Mark A.

PATENT ASSIGNEE(S): G.D. Searle and Co., USA; Chen, Barbara B.; Chen,

Helen Y.; Clare, Michael; Rao, Shashidhar N.; Russell,

Mark A.

SOURCE: PCT Int. Appl., 102 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PA:	PATENT NO.						KIND DATE			APPLICATION NO.									
WO	 9736			A1 19971009															
	W:	AL,	ΑM,	ΑT,	AU,	ΑZ,	BA,	BB,	ВG,	BR,	BY,	CA,	CH,	CN,	CU,	CZ,	DE,		
		DK,	EE,	ES,	FI,	GB,	GE,	GH,	HU,	IL,	IS,	JP,	KE,	KG,	KP,	KR,	KΖ,		
		LC,	LK,	LR,	LS,	LT,	LU,	LV,	MD,	MG,	MK,	MN,	MW,	MX,	NO,	NZ,	PL,		
		PT,	RO,	RU,	SD,	SE,	SG,	SI,	SK,	ТJ,	TM,	TR,	TT,	UA,	UG,	US,	UZ,		
		VN,	YU																
	RW:	GH,	KΕ,	LS,	MW,	SD,	SZ,	UG,	ΑT,	BE,	CH,	DE,	DK,	ES,	FI,	FR,	GB,		
		GR,	ΙE,	ΙΤ,	LU,	MC,	NL,	PT,	SE,	BF,	ВJ,	CF,	CG,	CI,	CM,	GA,	GN,		
		$\mathrm{ML}$ ,	MR,	ΝE,	SN,	TD,	TG												
CA	2250	695			A1		1997	1009		CA 1	997-	2250	695		1	9970	320		
AU	9723238				Α					AU 1997-23238									
EP	889875				A1				EP 1997-915937						1	9970	320		
EP	8898	75			В1		2001	0620											
		•	•	•	•	•	ES,		•	•	•	•	•		•	•	•	FI	
JP	2000	5075	75		Τ		2000	0620	JP 1997-535279					19970320					
AT	2023	37			T		2001	0715		AT 1	997-	9159	37	19970320					
ES	2158															9970	320		
GR	3036	253			Т3		2001	1031		GR 2						0010			
PRIORIT	Y APP	LN.	INFO	.:						US 1									
										WO 1	997-	US39	87	,	W 1	9970	320		
OTHER SO	OURCE	(S):			MARI	PAT	127:	3462	01										

The title compds. [I; A = NR5C(:Y)NR7R8 (wherein Y1 = NR2, O, S; R2 = H, alkyl, aryl, etc.; R7, R8 = H, alkyl, alkenyl, etc.; R5 = H, alkyl, alkenyl, etc.), NR5C(:NR7)Y2 (Y2 = alkyl, cycloalkyl, bicycloalkyl); Z1, Z2, Z4, Z5 = H, alkyl, hydroxy, etc.; B = CH2CONH, C(O)O, SO2NH, etc.; l = 0-3; t = 0-2; R50 = H, alkyl, aryl; R = XR3 (wherein X = O, S, NR4; R3, R4 = H, alkyl, alkenyl); Y3, Z3 = H, alkyl, aryl, etc.; R1 = NHC(O)R12, NHC(O)OR12; NHSO2R12, etc. (wherein R12 = H, alkyl, cycloalkyl, etc.)] and their pharmaceutically acceptable salts, selective inhibitors or antagonists of  $\alpha v \beta 3$  integrin, and therefore useful for treating tumor metastasis, solid tumor growth, angiogenesis, osteoporosis, humoral hypercalcemia of malignancy, smooth muscle

cell migration, and restenosis, were prepared Thus, treatment of 3-guanidinobenzoic acid.HCl in DMF with 1-methylpiperidine followed by the addition of iso-Bu chloroformate, and after 5 min Et 2-(4-aminophenyl)cyclopropanecarboxylate in DMF afforded the title compound II.CF3COOH which showed IC50 of 525 nM against  $\alpha v\beta 3$  integrin.

IT 193149-22-3P

RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); RCT (Reactant); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)

(preparation of phenyl-substituted cyclopropanealkanoic acids as  $\alpha\nu\beta3$  integrin antagonists or inhibitors)

RN 198149-22-3 CAPLUS

Cyclopropanecarboxylic acid, 2-[4-[[3-[(aminoiminomethyl)amino]benzoyl]amino]phenyl]-, ethyl ester, 2,2,2-trifluoroacetate (2:3) (CA INDEX NAME)

CM 1

CN

CRN 198149-21-2 CMF C20 H22 N4 O3

$$\begin{array}{c|c} & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ &$$

CM 2

CRN 76-05-1 CMF C2 H F3 O2

IT 198149-21-2P 198149-23-4P 198149-24-5P 198149-27-8P 198149-28-9P 198149-29-0P 198149-30-3P 198149-31-4P 198149-32-5P 198149-33-6P 198149-34-7P 198149-35-8P 198149-36-9P 198149-37-0P 198149-38-1P

RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(preparation of phenyl-substituted cyclopropanealkanoic acids as  $\alpha v \beta 3$  integrin antagonists or inhibitors)

RN 198149-21-2 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[3-

[(aminoiminomethyl)amino]benzoyl]amino]phenyl]-, ethyl ester (CA INDEX NAME)

$$\begin{array}{c|c} & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ & & \\ &$$

RN 198149-23-4 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[3-[(aminoiminomethyl)amino]benzoyl]amino]phenyl]- (CA INDEX NAME)

$$NH = \bigcup_{NH} NH = \bigcup_{NH} NH = \bigcup_{NH} NH$$

RN 198149-24-5 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[3[(aminoiminomethyl)amino]benzoyl]amino]phenyl]-, 2,2,2-trifluoroacetate
(1:1) (CA INDEX NAME)

CM 1

CRN 198149-23-4 CMF C18 H18 N4 O3

$$NH = \bigcup_{NH} NH = \bigcup_{NH} NH$$

CM 2

CRN 76-05-1 CMF C2 H F3 O2

RN 198149-27-8 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[3-[(aminoiminomethyl)amino]benzoyl]amino]-2-methoxyphenyl]-, ethyl ester (CA INDEX NAME)

$$\begin{array}{c} \text{MeO} \\ \text{NH} \\ \text{C} \\ \text{NH} \end{array}$$

RN 198149-28-9 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[3[(aminoiminomethyl)amino]benzoyl]amino]-2-methoxyphenyl]-, ethyl ester,
2,2,2-trifluoroacetate (1:1) (CA INDEX NAME)

CM 1

CRN 198149-27-8 CMF C21 H24 N4 O4

$$\begin{array}{c} \text{MeO} \\ \text{NH} \\ \text{C-NH} \\ \text{NH} \end{array}$$

CM 2

CRN 76-05-1 CMF C2 H F3 O2

RN 198149-29-0 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[3-[(aminoiminomethyl)amino]benzoyl]amino]-2-methoxyphenyl]- (CA INDEX NAME)

RN 198149-30-3 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[3-[(aminoiminomethyl)amino]benzoyl]amino]-2-methoxyphenyl]-, 2,2,2-trifluoroacetate (2:3) (CA INDEX NAME)

CM 1

CRN 198149-29-0 CMF C19 H20 N4 O4

$$\begin{array}{c} \text{MeO} \\ \text{NH} \\ \text{C} \\ \text{NH} \\ \text{C} \\ \text{NH} \\ \text{NH} \end{array}$$

CM 2

CRN 76-05-1 CMF C2 H F3 O2

RN

RN 198149-31-4 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[3-[(aminoiminomethyl)amino]-5-(trifluoromethyl)benzoyl]amino]phenyl]- (CA INDEX NAME)

$$\begin{array}{c} \text{NH} \\ \text{NH} \\ \text{C} \\ \text{NH} \\ \text{C} \\ \text{NH} \\ \text{C} \\ \text{F} \\ \text{3} \\ \end{array}$$

CN Cyclopropanecarboxylic acid, 2-[4-[[3-[(aminoiminomethyl)amino]-5-(trifluoromethyl)benzoyl]amino]phenyl]-, 2,2,2-trifluoroacetate (10:13) (CA INDEX NAME)

CM 1

CRN 198149-31-4 CMF C19 H17 F3 N4 O3

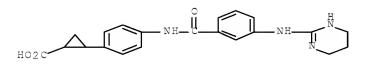
$$\begin{array}{c} \text{NH} \\ \text{NH} \\ \text{C} \\ \text{NH} \\ \text{C} \\ \text{F} \\ \text{3} \\ \end{array}$$

CM 2

CRN 76-05-1 CMF C2 H F3 O2

RN 198149-33-6 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[3-[(1,4,5,6-tetrahydro-2-pyrimidinyl)amino]benzoyl]amino]phenyl]- (CA INDEX NAME)



RN 198149-34-7 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[3-[(1,4,5,6-tetrahydro-2-pyrimidinyl)amino]benzoyl]amino]phenyl]-, 2,2,2-trifluoroacetate (10:11) (CA INDEX NAME)

CM 1

CRN 198149-33-6 CMF C21 H22 N4 O3

CM 2

CRN 76-05-1 CMF C2 H F3 O2

RN 198149-35-8 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[3[[[(aminocarbonyl)amino]iminomethyl]amino]benzoyl]amino]phenyl]- (CA
INDEX NAME)

RN 198149-36-9 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[3-[[(aminocarbonyl)amino]iminomethyl]amino]benzoyl]amino]phenyl]-, 2,2,2-trifluoroacetate (5:6) (CA INDEX NAME)

CM 1

CRN 198149-35-8 CMF C19 H19 N5 O4

$$NH = \bigcup_{NH} NH =$$

CRN 76-05-1 CMF C2 H F3 O2

RN 198149-37-0 CAPLUS
CN Cyclopropanecarboxylic acid, 2-[4-[[3[(aminoiminomethyl)amino]benzoyl]amino]-3-fluorophenyl]- (CA INDEX NAME)

RN 198149-38-1 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[3-[(aminoiminomethyl)amino]benzoyl]amino]-3-fluorophenyl]-, 2,2,2-trifluoroacetate (1:1) (CA INDEX NAME)

CM 1

CRN 198149-37-0 CMF C18 H17 F N4 O3

CM 2

CRN 76-05-1 CMF C2 H F3 O2

IT 198149-41-6P 198149-42-7P 198149-47-2P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(preparation of phenyl-substituted cyclopropanealkanoic acids as  $\alpha\nu\beta3$  integrin antagonists or inhibitors)

RN 198149-41-6 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[3-

[[(cyanoamino)iminomethyl]amino]benzoyl]amino]phenyl]-, ethyl ester (CA INDEX NAME)

RN 198149-42-7 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[3-

[[[(aminocarbonyl)amino]iminomethyl]amino]benzoyl]amino]phenyl]-, ethyl ester (CA INDEX NAME)

RN 198149-47-2 CAPLUS

CN Cyclopropanecarboxylic acid, 2-[4-[[3-[[bis[[(1,1-dimethylethoxy)carbonyl]amino]methylene]amino]benzoyl]amino]-3-fluorophenyl]-, 1,1-dimethylethyl ester (CA INDEX NAME)

OS.CITING REF COUNT: 4 THERE ARE 4 CAPLUS RECORDS THAT CITE THIS RECORD

(8 CITINGS)

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS

RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

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